MARCH, 1952
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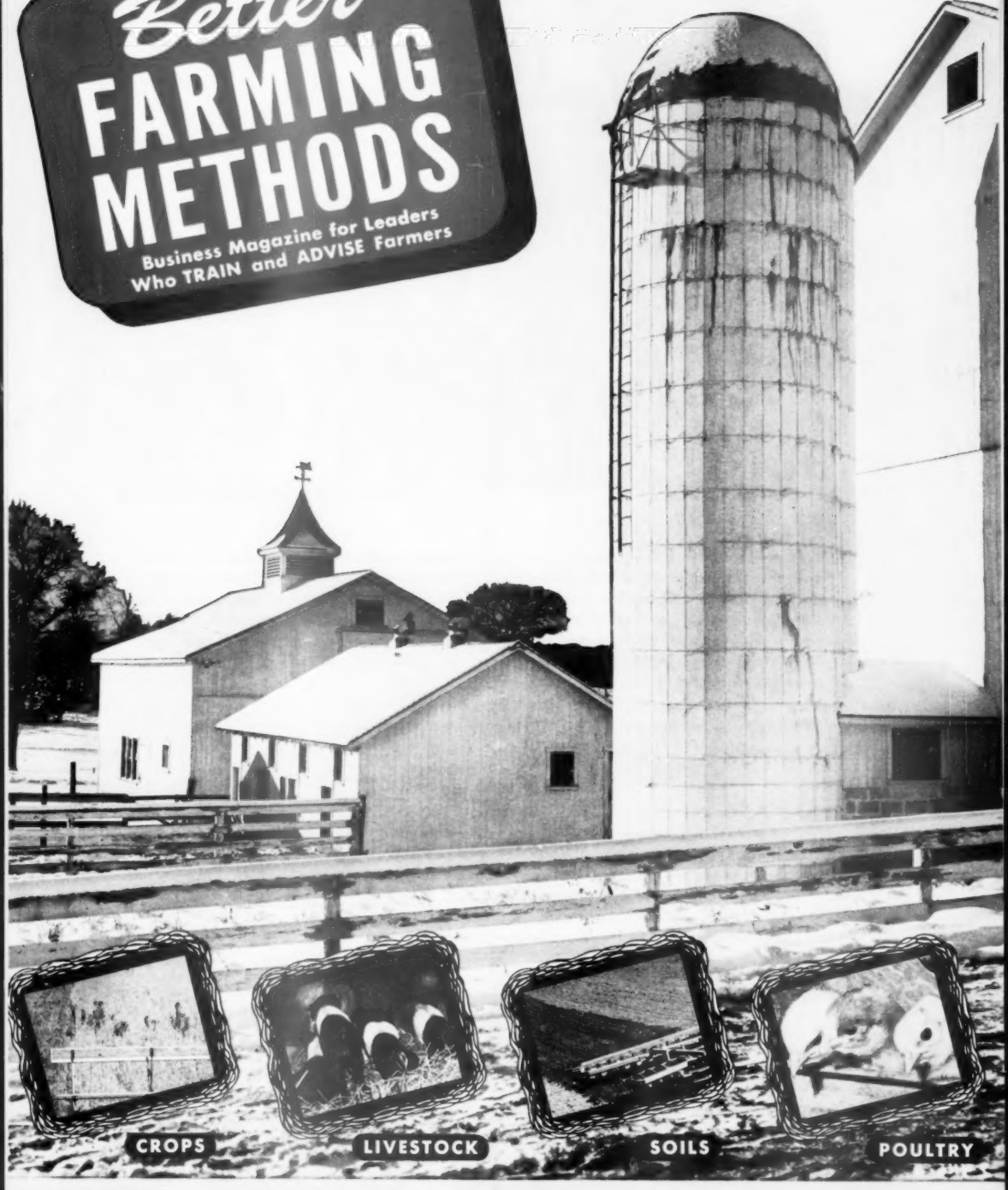
Better FARMING METHODS

Business Magazine for Leaders Who TRAIN and ADVISE Farmers



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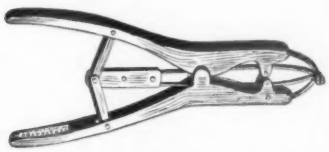

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Business Magazine for Leaders Who Train and Advise Farmers

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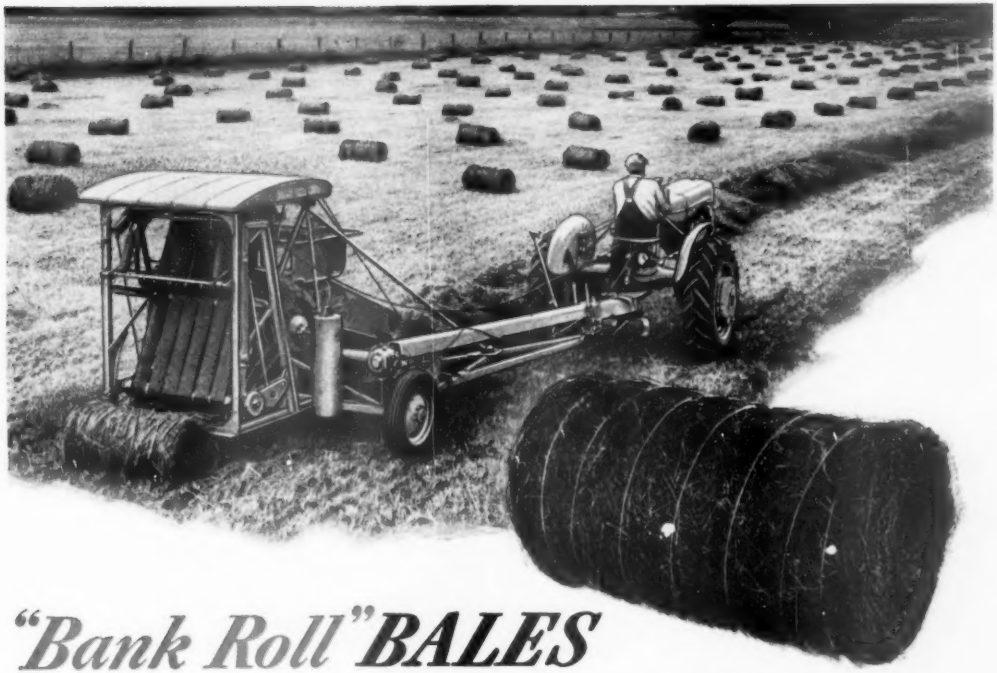

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WASHINGTON NEWS

By Fred Bailey

Written Exclusively for Better Farming Methods

SENATE AGRICULTURE COMMITTEE STILL INVESTIGATES—Congressional probing of the Department of Agriculture is painful, but not likely to be fatal. Nevertheless, Department officials will rest a lot easier when it is all over with . . . they hope.

C. F. Brannan

Even the most ardent tormentors of the Department concede that, so far as any direct proof goes, the Department's sins are more of the nature of omissions than commissions. On the other hand, the USDA officials uneasily concede that they cannot be certain that the Department is as innocent of all wrongdoing as they now think it is.

Secretary Brannan already has entered an official plea of nolo contendere to Senate Agriculture Committee suggestions that some of official family may have been guilty of poor judgment and bad management. The known facts so far seem to support that assumption. Brannan is entitled to hope that the indictment does not become more specific. The Senate Agriculture Committee has been given another $50,000 to finance its inquiry into the operations of the Commodity Credit Corporation. Some folks in CCC, it is said, were looking the other way when some shysters in the grain storage business made off with several million dollars worth of government grain. The Committee wants to find out whether those folks were crooked, or just plain stupid.

INVESTIGATIONS DISRUPT DEPARTMENT ROUTINE—Whether or not the investigations prove anything, the unfortunate fact remains that they seriously disrupt Department routine. When Congress calls officials drop whatever they are doing and rush to Capitol Hill to bow and scrape before the passers of laws and the appropriators of monies.

When Secretary Brannan gets a call to appear before a congressional committee it immediately becomes a command performance. At least 20 people, and often 100 or more, must drop whatever they are doing, however important, and prepare the Secretary for his joust with the legislators. Sometimes they have only a few hours notice and so must work through the night. Sometimes it takes them away from their regular work for days.

For the key personnel in the administrative agencies such a diversion often disrupts the working of a large part of the Department. The Department always has hundreds of irons in the fire, and none of them can be safely left to cool for too long. Yet, there is one ironclad rule in the Department, as in other government agencies: Never say "no" to a congressman.

FARM LEGISLATION QUESTION APPEARS DULL—On the question of how much new farm legislation Congress will enact this year there is an easy, three-word answer: Little, if any. Leaders of both political parties have about come to the conclusion that what farmers want now is to be left alone with just about what they now have and not disturbed too much by Washington.

Some congressmen came back to Washington in January and immediately began talking about higher price supports, and about making the flexible parity formula a little less flexible. When there was no audible demonstration of approval by the farm groups in Washington, or from back home, the higher supports talk sort of died out. Congressmen don't like to talk unless someone is listening.

Some dull afternoon Congress will talk about reorganizing the Agriculture Department. And that is just what it will be, a dull afternoon. None of the farm organizations seem to get up a sweat over new legislation. They are more interested in OPS, Universal Military Training, and things like that. For the first time in years they have little or nothing to "sell" the agriculture committees.

USDA BUDGET GIVEN CAREFUL ATTENTION—There is some interest in the Agriculture Department appropriations measure, but that is evidenced mostly by those on the USDA payroll. The budget is a whopping $1,680,000,000, up $70,000,000 over the current fiscal year. The House Appropriations Sub-committee for agriculture is showing signs of counting it out dollar by dollar.

As usual, the largest single item is for PMA's Agricultural Conservation Program. PMA wants $276,808,000 to pass out as ACP payments and for other purposes. The President suggested that the authorization for the following year ought to be $20,000,000 less. Debate, in and out of the Subcommittee, now is

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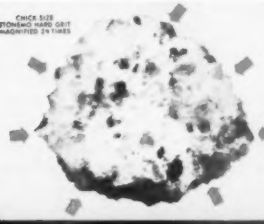

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MORE PASTURE. By topdressing ammonium nitrate fertilizer in the fall and spring, J. B. Spears and Sons of Covington, Ga., grazed 225 head of mature beef cattle from October through March on 140 acres of fescue and Ladino clover!

THESE SPENCER AGRONOMISTS want to help County Agents, Vo-Ag Instructors, Extension Workers and Veteran's Instructors in every way they can. They are (left to right) P. W. Gull, Dallas Cantwell, R. L. Balser, James Menn and W. P. Morrison.

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whether to use a pruning knife or a meat ax on the authorization request.

The Agricultural Department, naturally, says don't use either. The two big farm organizations, Farm Bureau and Grange, have other ideas. They want PMA convicted of operating a subsidy and ordered by Congress to cease and desist from such practices in the future.

The total USDA budget, except for funds to operate the International Wheat Agreement, actually is below last year. The IWA cost estimate is $182,000,000, compared with $76,000,000 this year. Research at $75,000,000, school lunch at $83,000,000, and extension at $28,000,000 are unchanged. Minor cuts are recommended for Farmers Home Administration, REA and the Forest Service. SCS, at $60.6 million, is up $1,000,000.

EXTENSION AND SCS RACE FOR TOP HONORS—Probably it would be better if you don't mention this to either extension or SCS, but to some observers here it sems as if those two agencies may be about to eat PMA dust in the race for top honors as the nation's number one soil conservation agency.

Astute Gus Geissler almost certainly has jockeyed PMA into the lead with his plan to gear ACP payments to an individual farm conservation plan. Under this plan, as viewed by some PMA officials, extension would be out in the cold, and SCS would retain no more than a foot in the door. The SCS boys would be allowed on the farm to use their surveying instruments, and then told to go somewhere else to play.

Once the farm plan is drawn, either by SCS or the PMA committee, the PMA could carry on from there, administering the plan and making the payments. Some SCS folks we've talked with don't think it is quite fair. And don't be surprised if extension starts yelling "robber."

Nevertheless, those who oppose the PMA plan already have two strikes against them. The major farm groups do not seem anxious to shed their blood on Capitol Hill in opposition to Geissler. Nearly every congressman we've talked with says that the plan does nothing whatever to blood pressure. There is an old saying, also true in Washington: You can't beat something with nothing.

★

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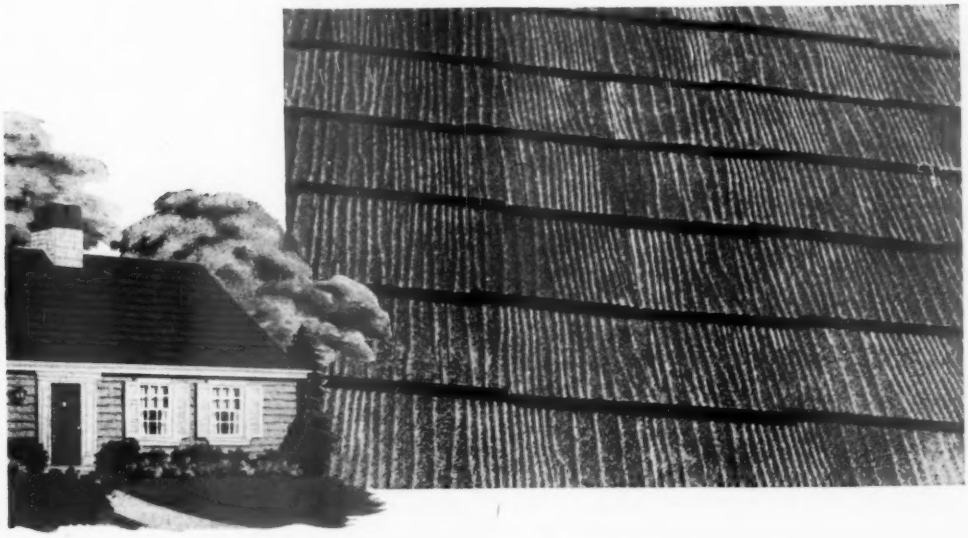

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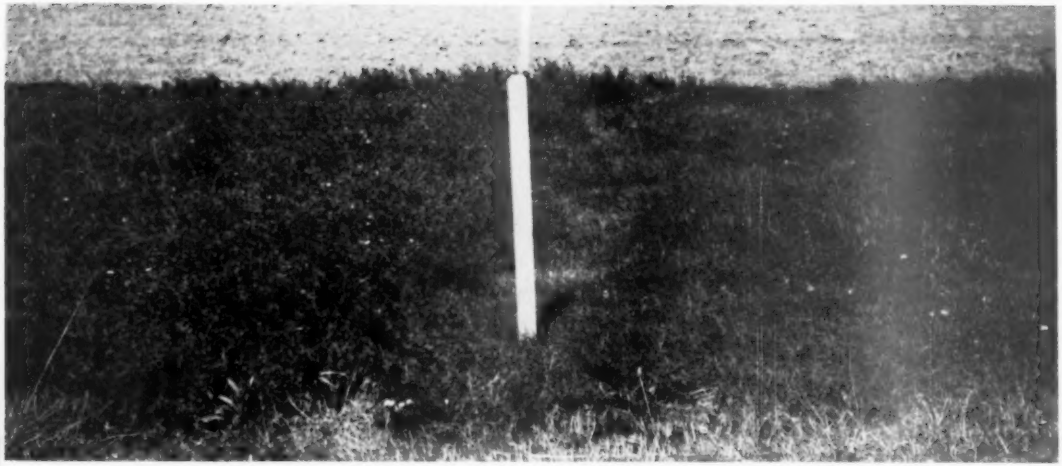

At the left is Granger birdsfoot trefoil in a plot alongside New York's Empire strain, right. In both plots, the grass is red fescue. Notice the comparative speedy recovery after cutting of the Granger.

Maybe Your Farmers Need . . .

A Birdsfoot Trefoil With Seedling Vigor

By R. G. Fowler, Jr.
Oregon State College

● GRANGER BIRDSFOOT trefoil is what it's called—named "Granger" for the Oregon State college experiment station where it was developed—and farmers who plant it in localities where birdsfoot trefoil fulfills a need will like it because it has added seedling vigor.

At best, most trefoils or lotuses are slow starting, not too easily established. The result has been frequent stands plowed under during their first growing season by farmers who gave up in disgust before the crop had a chance to establish itself. Granger is a selection aimed to overcome this trefoil failing. And coupled with seedling vigor is longevity, says Henry Rampton, USDA agronomist who has been closely associated with its development at the Oregon experiment station.

"It's new enough that we don't know just how long it will live," he explains, adding, "but after a five-year test, Granger was the trefoil that looked best.

"Yield? On good lands it will approach alfalfa," the agronomist concludes.

Conceding that trefoil has a doubtful place in areas where you can grow good alfalfa, Rampton says Granger is a definite possibility for shallow or heavy soils, on those which are too acid for alfalfa, and on poorly drained lands. Granger, as do other trefoils, has a much wider range of soil adaptability than alfalfa.

Semi-Prostrate Plant

It is a semi-prostrate, fine stemmed legume which is characterized by abundant small leaves. From the forage standpoint, it is extremely palatable. It produces a tap root much like that of alfalfa and does not spread vegetatively.

Attractive to farmers who want to produce seed is the fact that the plant retains its green color and palatability even at time of seed harvest. Some Oregon farmers have fed threshed stems and leaves with excellent results.

Needs Temperate Climate

Although seed yielding information is limited, it is classed as "satisfactory" by Rampton who is inclined to be conservative. Yields above 300 pounds per acre have been harvested.

Granger lotus is a temperate zone plant, with adaptability similar to alfalfa but it probably won't stand cold temperature extremes of some hardy alfalfa varieties. Down the middle of the road, Granger is good.

The big talking point for Granger birdsfoot trefoil as a pasture legume is the fact that not one case of bloat has ever been recorded against it.

Yet don't be lulled into thinking you will have a rose-road with Granger. Before seeding, inoculate it with its own special type inoculant. Plant up to six pounds of seed to the acre when seeded alone and beware! You can drill it too deep. Rampton likes to seed it on top of a good, firm seedbed, then roll it in. For both irrigation or dryland conditions, spring seeding looks like the best bet. Most farmers who want forage rather than seed add a locally adapted grass to their Granger seedings. It makes better pasture that way.

Plant Grass In Fall

Without irrigation, here's a good trick: Plant Granger alone in the spring, and after the legume has had a summer's growth without competition, over-plant the grass in the fall.

With irrigation, go ahead and spring plant both the grass and Granger lotus together. It would help to keep livestock off the first growing season, but under irrigated conditions where good growth has been attained, some farmers turn stock in for late fall pasture.

Seed is not plentiful. What is available is being grown under certification requirements set by Oregon State college. Experiment stations in the trefoil "belt" are testing the crop, meanwhile, and will have information on its use.

AS GOOD AS A RAIN FROM BELOW

Riding the sky to "seed" rain clouds isn't the most practical way to give newly planted crops a drink between rains.

An older and more dependable way is to put a good mulch on top of the soil, and press out the air pockets below it. Natural laws older than man-made devices begin to operate. They actually pull water up from below to meet thirsty roots or dormant seeds that need extra moisture.

Farmers who use Brillion implements give their soil a "rain from below," for every Brillion implement . . . the Sure-Stand Seeder, Pulvi-Mulcher and Pulverizer . . . leaves a firm mulched seedbed as shown above. It helps speed germination, and improve plant growth and root development — all of which means more money in the pockets of farmers who own and use Brillion implements.

Ask your Brillion dealer how the Sure-Stand Seeder in particular does a moisture-saving job.

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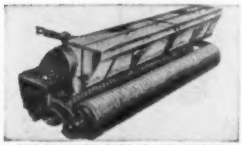
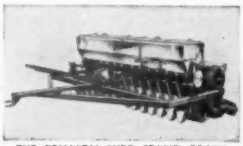


THE BRILLION SURE-STAND SEEDER. Seeds legume and brome, pulverizes and packs in one operation. Available in three sizes.



THE BRILLION SURE-STAND GRAIN DRILL. Drills grain, fertilizes, seeds legume and brome, and pulverizes in one operation.

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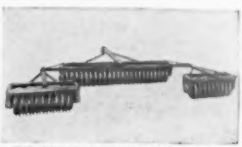

THE BRILLION PULVERIZER. Available in single, double and triple gang models; and a wide variety of widths.

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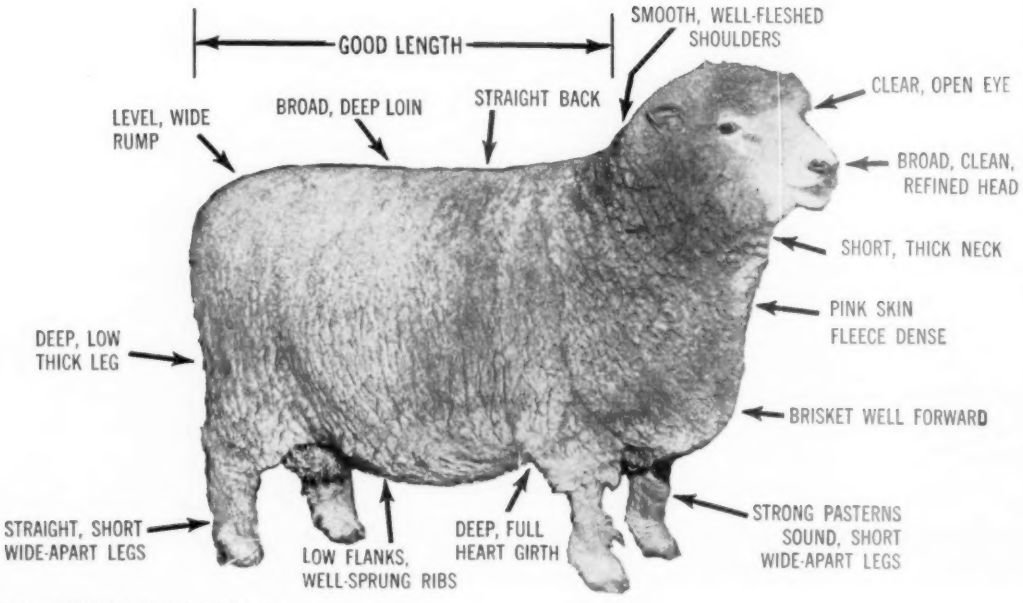
Practical Lesson in SHEEP JUDGING

Photos Courtesy
American
Corriedale Association

When judging any animal it is a good idea to start with the head. Examine it closely. The head should be broad and fairly short, refined, eyes large and clear, ears not coarse, and the mouth and nostrils should be large. With sheep, it is a good idea to look at the teeth as an aid to determining age.

The side view of the head should show the individual having a deep but not too long a head. Neck should be short, carried well, and clean at the throat. Examine the horn pits for traces of horns or scurs.



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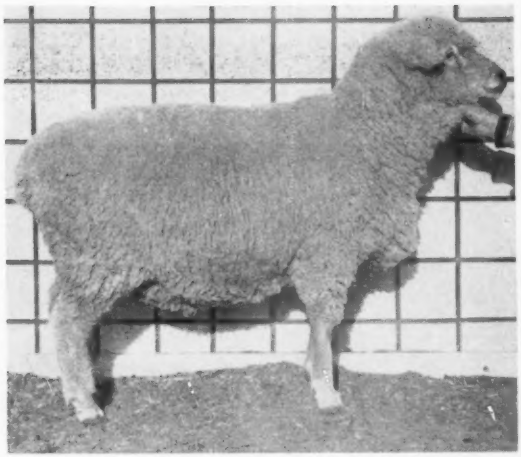

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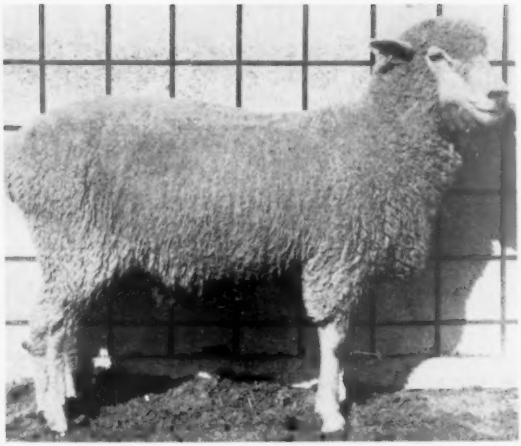
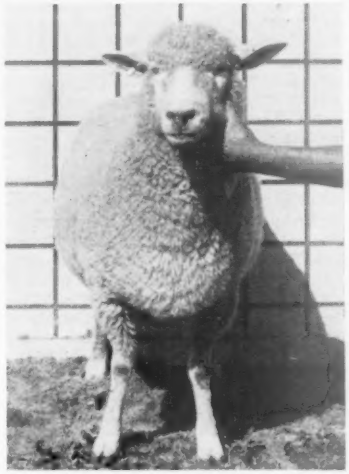


The side view of a sheep should show a deep-bodied animal, a straight, strong, and broad back and a leg of mutton that carries well down. Use the fingers to determine whether there is good fleshing over the back, loin, and rump. The brisket should extend well forward and be broad, deep, and full.



The back should be level and wide. This also affords an opportunity to check the condition of the wool by parting the fleece, noting the color of the skin. Check to see that the fleece is long and dense.

Note the sheep from a front view. The legs should be short, wide apart, and straight. The animal should stand on sound feet, and have strong pasterns and clean bone. The head should be well proportioned to the rest of the body, and the chest should be wide and broad. Check to see that the sheep has a good heart girth.

When viewing the animal from the rear, again check to see that the legs are strong, set wide apart, with straight hocks and strong pasterns. The rump should be wide, square at the dock, and evenly covered with firm flesh. A good animal needs a set of well-sprung ribs and should have low full flanks.

Ag Leaders Can Say . . .

Artificial Breeding Proves Successful

By Raymond Albrectsen
Cornell University

There is no bull here, for this New York dairyman hasn't kept a bull for nine years. Artificial breeding has proved very successful for him, with second generation offspring averaging an 89 pound increase in butterfat. Using tried and proved techniques, artificial breeding is more economical for the average dairyman than keeping a good sire.

● ARTIFICIAL BREEDING as a program won't be "21" for some time but it is doing a man-sized job. Five years ago it was still a problem child because of too many return services.

Things are different now. Artificial breeding can match bulls on breeding efficiency if tried and proved techniques are followed. The 130 or so technicians using semen from bulls owned by the New York Artificial Breeders' Cooperative have maintained a 60-90 day nonreturn of 70-72 percent for the past two years. This percent will adjust downward about 5 percent in terms of calves born, but that is at least equal to natural bull service.

A recent survey answered by 65 technicians revealed that 60 percent of the herds using artifical breeding service keep no bulls. These herds accounted for 75 percent of all the cows the technicians bred. No dairyman is going to dispense with a bull unless artificial breeding is all right. Thousands of dairymen can't go wrong.

Strive For Efficiency

Efficient production is the watchword everywhere. Dairymen know efficient production is possible only from good cows,—cows that are bred to produce a lot of milk.

What has artificial breeding done along this line?

New York DHIA records on 4,514 daughter-dam comparisons show daughters producing 11,514 pounds of milk and 426 pounds of fat on a 2X, 305 day, M. E. basis, an average increase of 153 pounds of milk and 15 pounds of fat. These records came from about 1,800 herds. Fifteen pounds of fat is about $20 more income per cow in a fluid milk market.

The abbreviation "M.E." stands for "mature equivalent" and is obtained by multiplying actual production records by an established factor the size of which depends on the age of the animal at freshening. This is intended to convert all actual records to a common basis, namely that of six years of age. In all proved sire work, 2X milking, 305 day lactations on an M.E. basis is standard.

What about individual herds? Well, here we can really see what artificial breeding bulls have done. The results aren't the same in every herd. Management and previous bulls both have a marked effect on the present results. Strangely, the better the herd average the greater is the average increase shown by artificial progeny.

Production Increases

For example, 11 herds that had an actual DHIA average for a three year period of 471 pounds of fat had artificial breeding daughters with an average increase of 741 pounds of milk and 38 pounds of fat from dams averaging 13,016 pounds of milk and 472 pounds of fat on an M. E. basis. Lower producing herds did correspondingly less. Really low producing herds (286 pounds of fat) actually showed a decrease in production. This situation is probably due to things other than breeding.

Use Proved Sires

What about the use of proved sires as compared to young bulls? We believe as of now that bull studs should breed the big majority of cows to desirably proved sires. The New York Artificial Breeders' Cooperative will breed 90 percent or better to proved sires. However, the young analyzed sires certainly have not wrecked any herds as some critics predicted they might. Some of them did not come through, but neither did some of the proved sires. The young sires are much more likely to be available when proved; the sire proved in natural service is gone when his real value is found.

There is increasing conviction that a bull desirably proved in artificial breeding is one of the most reliable of herd builders. It may well be that the young analyzed sire who proves to be a desirable sire through his artificial breeding daughters will be the super sire of tomorrow.

The records show that the Holstein proved sires had artificial breeding daughters that averaged 434 pounds of fat with an 18 pound fat increase. The analyzed young sires had daughters averaging 424 pounds of fat with a 14 pound fat increase, and fortunately most of the best ones such as "Crusader" are still in service. A program of selective mating using the artificial breeding proved sires on superior brood cows is another of the forward-looking programs of the New York Artificial Breeders' Cooperative.

Type Improves Too

What about type? This is harder to evaluate since type classification is not done in grade herds nor in many purebred herds. Artificial breeding progeny are successfully competing in our county, regional, and state fairs. They are some of the best for type of course. All show cattle are. The artificial breeding progeny must be reasonably good type because they usually command some premium in the public market place. They have a good reputation.

Yes, artificial breeding is a big, strapping program and hardly a decade and a half old. What's your guess for the next 10 years?

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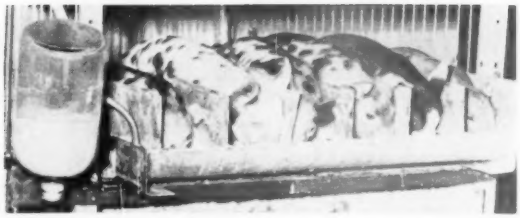


Replace This . . . as . . .

Pig Hatcheries Specialize Production

By Ben E. Sheffy
Cornell University

● WE HAVE HEARD a lot from time to time about "pig hatcheries," but never before has the word "hatchery" really meant what it suggests as much as it does today.

This, of course, is the direct result of a large volume of current publicity given to synthetic milks, early weaning, and a subsequent further specialized type of swine production.

Hatcheries Will Increase

There is no question that the so-called "pig hatcheries" are here to stay. The raising of feeder pigs is a very profitable enterprise and one that readily lends itself to concentration and specialization.

As swine men we all appreciate that one of the greatest "thorns in our side" is the excessively high loss we suffer from baby pig mortality. There are, we know, a variety of factors contributing to these high death rates, but we are rapidly learning that a good share of these losses can measurably be decreased by balanced feeding, proper sanitation, adequate equipment, and good conscientious management.

It is perfectly understandable that if one man's sole responsibility is to care for a swine herd, he can afford to pay greater attention to all of the above essentials of profitable pork production. Thus, he can do a much more effective job than a diversified operator can.

The present day "pig hatcheries" are designed to make maximum use of labor-saving devices. One unit usually has about 40 farrowing pens plus one or two holding pens. Each pen is equipped with guard rails, heat lamps, and a small area for creep feeding. The sows are fed by individual self-feeders and individual drinking cups are installed in each pen.

This so-called "one man" unit can accommodate 200 farrowings per year. With a well-calculated breeding program this can be accomplished with just a few more than a 100 sow herd.

Many of our present "pig hatchery" operators are averaging seven and one-half to eight pigs per litter weaned. This, of course, necessitates careful selection of breeding stock with emphasis on large litters and good milking ability.

Practically all of our "pig hatchery" men have commercial herds employing a two-breed cross or a three-breed criss-cross. Some of the more popular breeds used in these crosses are Hampshire, Chester White, Spotted Poland China, and Yorkshire.

The corn belt feeder is a busy man these days and with farm help becoming increasingly difficult to get, he is more than anxious to let someone else farrow and raise his pigs to weaning age. He is willing to pay a premium for thrifty 40 pounders which have been vaccinated, castrated and wormed, and are ready for the feedlot.

The hatchery producer has a real responsibility; he has to consistently produce a quality product. He holds his own future in his hands; his survival depends upon his ability to farrow and save more pigs than the average farmer.

Three Litters A Year

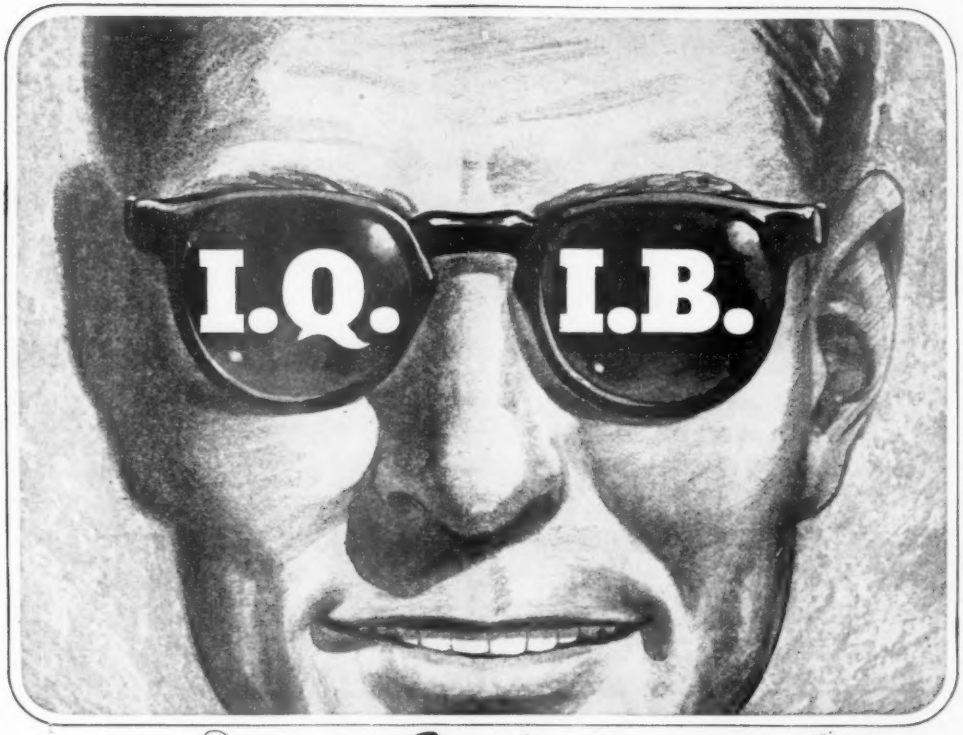
For several years the "pig hatchery" people have been vitally interested in weaning their baby pigs at an early date. With the aid of skimmilk and good creep mixtures, they have had considerable success in weaning pigs first at six and later at four weeks of age.

Prior to this, several of our agricultural experiment stations, namely, Illinois, Wisconsin, and Missouri, were doing considerable research concerned with the fundamental nutritional requirements of baby pigs. They used highly purified rations and were successful in raising baby pigs without colostrum as well as pigs that had nursed for 48 hours. Their rations were necessarily expensive and were not meant to be practical. These workers were interested in finding the exact nutrient requirements, thus paving the way for future work with more practical rations.

Synthetic Milk Available

Today there are on the market several practical synthetic sow's milks; some with added antibiotics and some without. The work to date, both in the laboratory and under a pig hatchery type of management, indicates that by taking the baby pigs away from the sow at two days of age, you cannot only raise a larger number of heavier, thriftier, more uniform pigs to weaning weight, but you can also rebreed the sow within a few weeks after farrowing. In spite of the

New "I"'s in Feed Making



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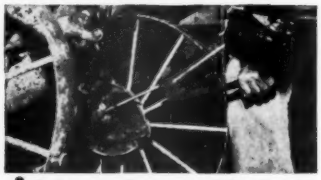
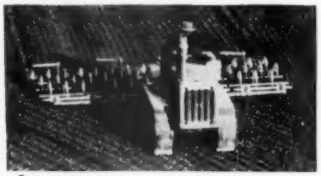
Here's what makes the quality in this grease:

1. Months of laboratory work were put into the development of this Gulf All-Purpose Farm Grease.



2. It has excellent pumpability in cold weather. Pumps easily through all types of equipment.

3. Has good rust-preventive qualities and is recommended for application to external parts of farm equipment.



4. Resists heat and washing action of water. Compounded to give superior results in most types of farm service.

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GULF

added labor cost and the present high cost of the artificial sow's milk, there is still a greater average return per pig.

Sow Is Dispensable

Thus, there is no doubt that except for the first few days, the sow as a lactating machine is dispensable. With the knowledge of baby pig nutrition that we have at our disposal we can do a better job than the sow can.

The economics of this type of feeder pig production, however, still leaves much to be desired. Present feeder pig prices justify the added expense, but an ever-narrowing corn-hog ratio with a subsequent lowered market for feeder pigs would necessitate a definite shaving downward of the present cost of the synthetic product. This necessitates much more research.

This pig separator will separate the pigs and sows rather easily. While useful on large commercial pig hatcheries, any large hog raiser could use it to advantage. Sows go over the top while the pigs are sent to either right or left. The separator is portable.

I am convinced that there is a real future in this revolutionary type of swine production. In these days of specialization with emphasis on efficiency of production, here truly appears to be a peak of both specialization and efficiency.

Caution Small Producer

I would, however, want to caution the 3-10 sow herd producer that this type of production is more adaptable to the assembly line type of production of the "pig hatchery."

Last but most important, no synthetic milk, no matter how nutritionally perfect or economical to use it may be, can take the place of good conscientious management, necessary sanitation, adequate equipment, and proper nutrition both prior to and during the gestation period. Remember, you begin to feed your baby pigs at the time when you select your gilts for replacements in your breeding herd. This is most important.

When writing advertisers please mention *Better Farming Methods*

Warfarin Contest Judges

The Wisconsin Alumni Research Foundation has named three judges for its rat and mouse control achievement campaign, it has been announced by Clarke A. Richards, educational director. They are: Ellsworth H. Fisher, extension entomologist, University of Wisconsin; Robert C. Clarke, Jr., state 4-H Club leader for Wisconsin; and Louis M. Sasman, chief, agricultural education, Wisconsin state board of education.

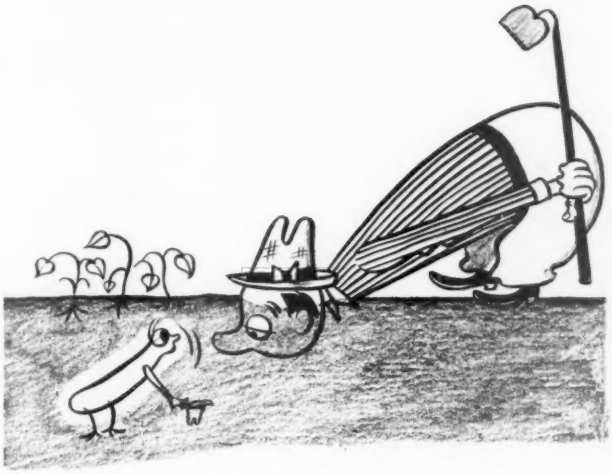
The duties of the judges, according to Richards, will be to check all entries in the current rat and mouse control achievement campaign being conducted among chapters of the Future Farmers of America and 4-H Clubs.

The participating organizations can qualify for a Silver Award, a Gold Award, or both. To qualify for the Gold Award, the organization, as a unit, is to encourage community participation in the campaign, using demonstrations, displays, and publicity. To merit the Silver Award, each member of the organization is to conduct a successful rat and mouse control program on his premises.

Organizations may obtain complete information on the campaign by writing to Wisconsin Alumni Research Foundation, P. O. Box 2059, Madison 1, Wis.

★

Here is a wall chart giving detailed instructions for handling the insecticide parathion. The poster measures 2 x 3 feet, black and red on a buff background, and illustrated with eye-catching drawings of protective equipment. It contains precautions and instructions for use, and directions to follow in case of accidental spillage. Ag leaders desiring a copy should write to Monsanto Chemical Company, St. Louis 4, Mo.



"Nobody here but us nematodes!"

. . but that means plenty of trouble. These tiny pests, present in most soils, cause root knots that block the plant's food line. Result: low yields!

Hardy Johnson, North Carolina grower, says, "I figure the $34.00 I paid for D-D per acre brought me an additional $411.17; or to figure further, I spent $1.00 on D-D and got $12.00 in return!"

Use the best . . . it costs you less. Plan a preplanting D-D* program now and enjoy the profits Hardy Johnson is getting. Don't take chances . . . treat your soil with genuine D-D, made only by Shell Chemical Corporation. Write for literature or see your local dealer as soon as you can.

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*D-D, a soil fumigant, Trade Mark Reg. U. S. Pat. Off.

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Vo-Ag teacher Gene Severson (middle, front row) poses with the officers of his FFA Chapter beside a large sign they have placed in their field of certified Shelby oats. This certified seed production project has the approval of community farmers. They benefit from it, and cooperate in any way they can.

This FFA Chapter Has Found . . .

Certified Seed Production Is A Good Project

By D. Stanley Geiser
Iowa State College

● CHOOSING A GOOD chapter project is sometimes a very difficult task. Every vocational agriculture instructor wants an FFA project for his students that will: (1) aid the rural community in some way; (2) be useful and applicable in the teaching program; and (3) return something to the members for the work they have contributed.

Gene Severson, young vo-ag teacher and adviser to the Sac City, Ia., Chapter of the FFA, thinks he has found a pretty good activity for his students—raising certified seed. He believes that many advisers could well use seed production as a project for their groups.

Severson says the production of quality seed is definitely one project that fulfills the requirements of a good Chapter project. And he adds that it is one appreciated by fathers and others in the community as a service project. The growing of seed does not compete with other community businesses, either, like some projects.

Production of quality seed has another advantage—it teaches group participation and cooperation in a very practical way. Severson states that more than half of the 44 members in Sac City's FFA turned out at one time to pull weeds and other foreign plants from a field of oats to be certified this year.

Other FFA Chapter advisers in Iowa have sensed the opportunities in producing quality seed as a project, and each year more are turning it into a yearly undertaking.

Start Project in 1947

The Sac City Chapter has produced seed since 1947. They have turned out good crops of Clinton oats, Adams and Hawkeye soybeans, and last year grew 30 acres of certified Shelby oats.

Severson explains how the Sac City Chapter carries out its annual project. First, members contract for land with a local farmer whose land they know is relatively free of noxious weeds. This gives the students practice in drawing up legal agreements.

With funds from the Chapter treasury, they buy certified seed to be sowed. The farmer who rents the land agrees to prepare the seedbed and sow the seed.

Members Clean Seed

The job of cleaning the seed field of noxious weeds and other crops and varieties that become mixed with the crop, falls on the shoulders of the members. The boys agree to meet at a specified time and clean up the field.

An inspector from the Iowa Crop Improvement Association, state certifying agency, then visits the field and gives the group the "go-ahead" signal or requires them to re-clean the field. The farmer who contracted the land does the combining, and is carefully supervised by the Chapter adviser to see that no mixtures occur.

All harvested seed is cleaned through a Clipper fanning mill, owned by the

Severson finds that this group project is an excellent teaching opportunity. Here he is explaining varietal purity, showing true-to-type and off-type plants to his students.

Now... 473 tests prove RCA projector

EASIER TO THREAD

Here's how 473 people were timed while threading the RCA sound projector. Most of them threaded it in less than 30 seconds.

AT A RECENT TRADE SHOW, 473 persons stepped up and tried their hand at threading this new RCA 16mm sound projector.

- **Some threaded it in *only 7 seconds.***
- **Many threaded it in *less than* 20 seconds.**
- **Most of them threaded it in *less than* 30 seconds.**

Think of it! Hundreds of people actually threaded this RCA projector in *less than 30 seconds!* No wonder it's called "Thread-Easy." IT'S THE *EASIEST THREADING PROJECTOR EVER BUILT!*

"Thread-Easy" simplifies your teaching or selling job

"Thread-Easy" leaves your mind free for teaching or selling. It's so simple. Entire film-threading path is wide open, easy to get at. So easy you can actually thread it while you're lecturing . . . thread it in the dark . . . thread it with one hand. Youngsters can thread it. *It's just downright easy to thread!*

This projector helps you 3 other ways, too

It's *easy to set up.* Actual time tests prove you can unpack it and put picture and sound on the screen in only 2 minutes.

It's *easy to pack up.* Time tests prove you can button it up ready to travel in only 3 minutes.

And it's *easy to carry.* Junior model weighs only 33½ pounds. Women like its rounded corners, proper balance. Doesn't bump your leg as you walk.

The RCA "400" is built to assure uninterrupted shows

You can forget about those awful last-minute failures. It's designed for the hard knocks of school and commercial use.

You can change a projection lamp in *less than 45 seconds.*

You can replace an exciter lamp in *less than 20 seconds.*

This projector *lets you recover a lost film loop without stopping the show.*

Want to rewind *fast?* This machine rewinds a 10-minute film in 66 seconds *without shifting belts, pulleys, or reels.*

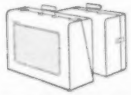
Need a quiet projector? This one purrs along with 58.5 decibels operating noise . . . *quieter than other projectors by actual db meter tests.*

Before you buy *any* projector at *any* price, make this simple comparison

Compare this new RCA sound projector with *any other 16mm projector at any price.* Try threading the RCA. Time yourself. *Now try threading any other 16mm projector.* See what we mean? Like hundreds of others, you'll readily see that the RCA "Thread-Easy" is definitely the EASIEST THREADING PROJECTOR EVER BUILT.

Just try it and see for yourself!

RCA "400" Junior "Thread-Easy." Handsome blue-green spatter finish. Weighs 33½ lbs. 7-watt amplifier, 8-inch speaker. For classrooms, small auditoriums.



RCA "400" Senior "Thread-Easy." A truly de luxe, two-case projector. Its 10-watt amplifier and 10-inch speaker make it ideal for larger rooms, auditoriums, road shows. Projector case weighs 36¼ lbs. Speaker case weighs 26 lbs. Projector finish is a handsome blue-green spatter effect.

Other RCA accessories for your audio-visual shows

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BAFFLE SPEAKERS

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CONSOLE SPEAKERS

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Radio Corporation of America, Camden, N. J.

Without obligation, please send me full story on new "Thread-Easy" RCA "400" 16mm sound projector.

I'm interested in

- ☐ Junior model for classrooms, small auditoriums
- ☐ Senior model for larger auditoriums

Name_____ Position_____

Address_____

City_____ State_____

☐ **Please arrange actual demonstration**

RCA

VISUAL PRODUCTS

RADIO CORPORATION of AMERICA

ENGINEERING PRODUCTS DEPARTMENT, CAMDEN, N.J.

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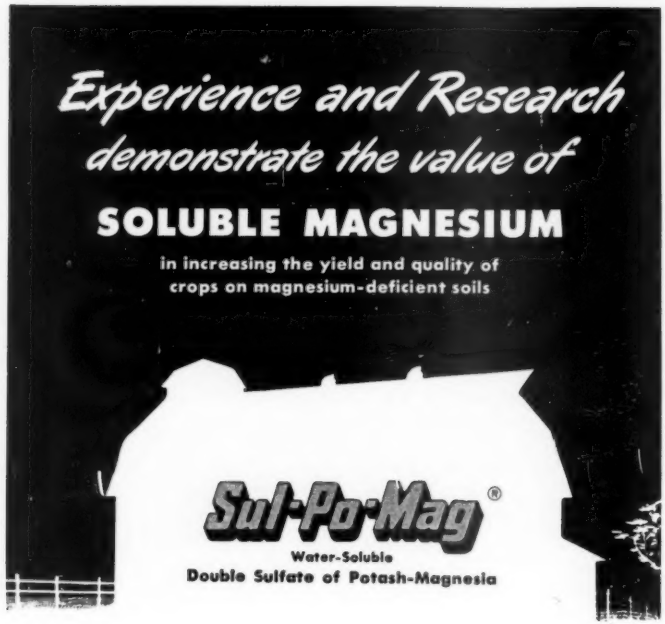

● Farmers in many areas are getting excellent results with mixed fertilizers containing soluble magnesium.

When the magnesium supply is low or out of balance with the other mineral elements in the soil, the use of soluble magnesium results in earlier maturity, healthier growth, finer quality and larger yields of many crops: *tobacco, cotton, citrus and other fruit, potatoes, corn, truck crops, alfalfa and other legumes.*

The most practical and economical way a farmer can supply the essential soluble magnesium his crops need is to use *Sul-Po-Mag*, a natural combination of potash and magnesium in soluble form and immediately available to crops.

Because of the rapidly developing recognition by farmers and state agricultural authorities of the need for soluble magnesium, leading fertilizer manufacturers are now including *Sul-Po-Mag* in their fertilizer mixtures. It is also bagged for direct application where crops require additional amounts of magnesium and potash.

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"Increase Crop Quality and Yield With Sul-Po-Mag"

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MINERALS International CHEMICALS

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Sul-Po-Mag

INTERNATIONAL MINERALS & CHEMICAL CORPORATION

General Offices: 20 North Wacker Drive, Chicago 6

Sac City Chapter. Seed samples are picked up by the certification agency late in autumn.

Each Boy A Salesman

If the seed passes all tests for certification, there remains one important task —that of selling the seed. Each of the 44 members is a salesman. Each gets practice in the art of selling by offering the seed to fathers, neighbors, friends, or relatives. Some of the boys even go into outlying counties to try their salesmanship.

Severson stated the group made about $700 on their project last year. The profit is the difference between market price of field-run oats and the price of certified seed oats. The farmer whose land was rented receives the same amount of combine-run oats as his field produced in certified seed. Of course, points out Severson, weather, diseases, and changing prices of grains all affect the profit that can be made from such a project of seed certification.

But anyway you look at it, this is a good group project that also pays off in practical experience and community service. Severson thinks that, because of the good points of this project, it will continue to become increasingly popular.

★

Land Judging Contest

A national contest in land judging and appreciation, conducted along the lines of a livestock judging contest, will be held in Oklahoma City, May 1 and 2. All states are invited to send a 4-H team, FFA team, and adult team of judges.

The contest, first to be held on a national scale, is sponsored by an Oklahoma City radio station, the Oklahoma A & M college extension service, state vocational agriculture department, Soil Conservation Service, state department of agriculture and other agricultural agencies and groups.

Land judging schools have been held in Oklahoma for the past 11 years, and have proved a near sensation among both youth and adult farmers. The first such school was held in 1941 on the Red Plains experiment station at Guthrie, Okla., but since that time has been widely used and adopted.

Awards will be provided in each of the three separate classes of judging, 4-H, FFA, and adult. Only one team in each division may enter from a county in each state.

The contest calls for participants to judge four different fields, or pieces of land. They walk about it, examine the contour, top soil, and slope. They judge the texture of the soil, which means the size of the soil particles and amount of clay in it. They pick up samples of the soil, and look at it for permeability of sub-soil, the toughness, or ability for air and water to filter in. They squat around

When writing advertisers please mention *Better Farming Methods*

a hole which has been spaded into the ground down through the top soil, and examine it for depth of the soil. This determines root penetration, the capacity of the soil to hold water and plant food. They look at the amount of slope, determine how much erosion has occurred, the drainage condition of the soil and finally, determine the land class, or catalog it according to its capability.

★

Hormone Helps Breeding

A new sex hormone that makes possible doubling the annual lamb crop in the United States and has proven highly successful in treating sterility in cattle, swine, and other domestic animals has been developed by chemists of the Upjohn Company.

The hormone called ECP will be widely available by March 1. It has been tested at 33 agricultural colleges, state experiment stations, and by 36 veterinary practitioners.

Tests already concluded indicate that ECP will bring ewes, normally fertile only in late fall and winter, into heat twice a year.

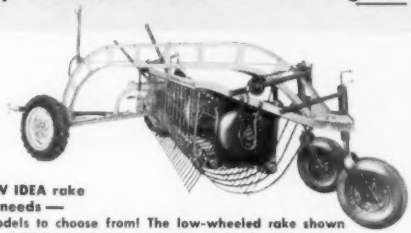
Alabama Polytechnic Institute treated 116 temporarily sterile cows with ECP and reported success in 93.1 percent of the cases. This is against 58.8 percent success in treatment with an older hormone, stilbesterol. Preliminary tests with ECP indicate that most sows can be brought into heat after treatment. The hormone also has been used with excellent results on beef cattle.

★

This is a measuring wheel, called Rolatape, four feet in circumference that registers distances up to 100,000 feet, then repeats cycle. It actually measures and records as it is wheeled over any given course. Made by Rolatape, Inc., Santa Monica, Cal.

Quicker Cure . . Less Bleach . . . Better Hay! .

That's why a **NEW IDEA** *is a good idea!*



There's a NEW IDEA rake to meet your needs —
Two sturdy models to choose from! The low-wheeled rake shown here has husky 5.50-16 implement tires. The high-wheeled version shown in top photo is available with steel rimmed or rubber tired wheels. Both are instantly reversible for tedding.

NEW IDEA's four-bar reel and special double-curved teeth gently fluff hay into a loose, uniform windrow that drying breezes pass through easily. With tender leaves turned carefully to the center of the windrow, the sun works on tough stems, does not bleach as it dries. That means better hay in the barn in a shorter time!

Builders of the first side delivery rake of this type, NEW IDEA has constantly improved rake performance. Latest features on low wheel rake are an enclosed roller chain drive, and oil-bath drive gears. Rakes are adjustable for heavy or light hay — and both are instantly ready for gentle, thorough tedding at the flip of a lever.

These superior raking features mean more protein . . . more carotene . . . more total digestible nutrients . . . feed that stock will clean up to the last spear.

NEW IDEA Mowers offer you faster, easier, better mowing. Two quick-hitch types to choose from. Fit most tractors.

You can get the full story on NEW IDEA rakes from your community NEW IDEA dealer. He'll tell you about the other tools listed on the coupon. Or send coupon for free literature.

Mail coupon today for free folders.

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FARM EQUIPMENT CO.
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Check free folders you want:

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- ☐ Hay Loaders
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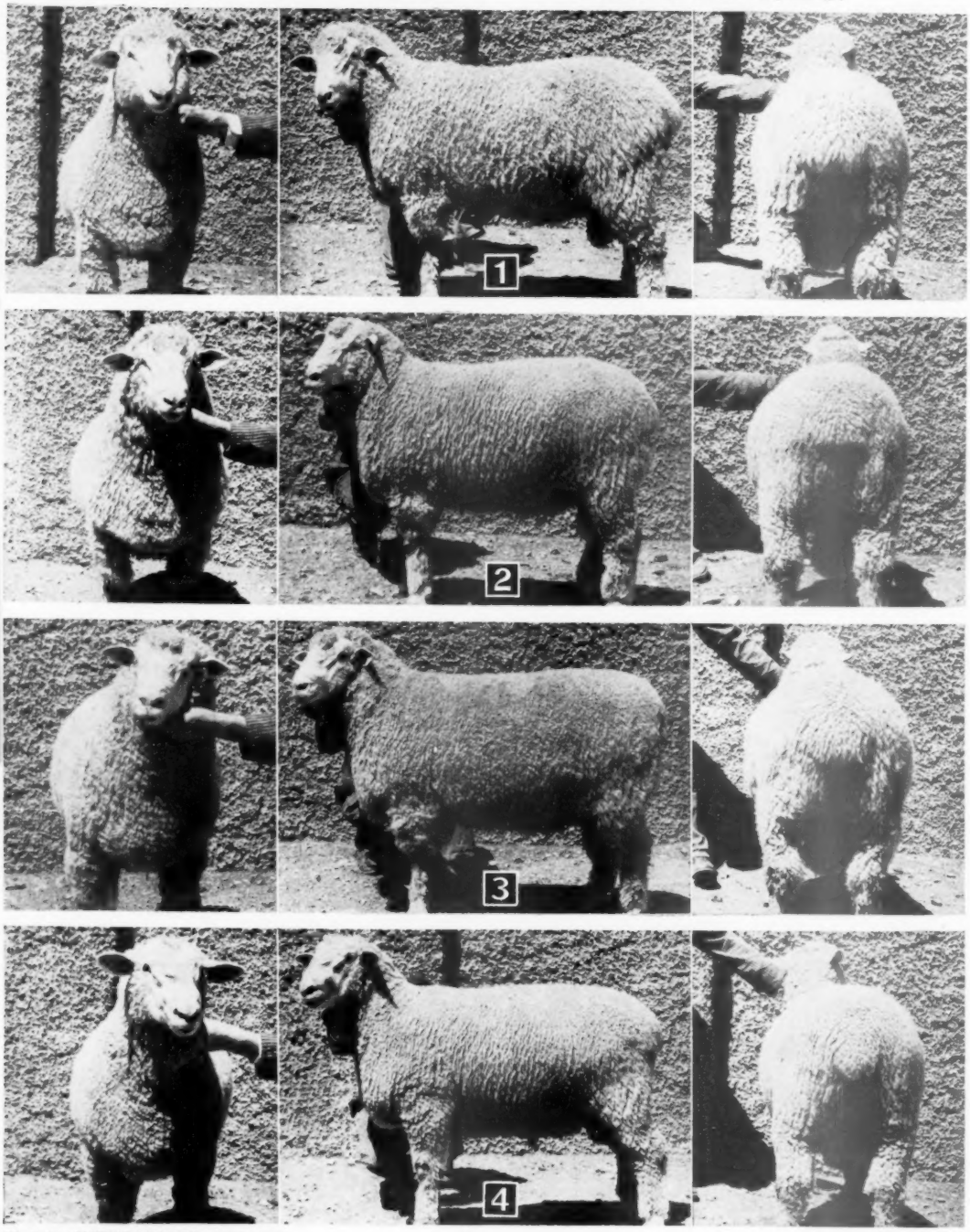
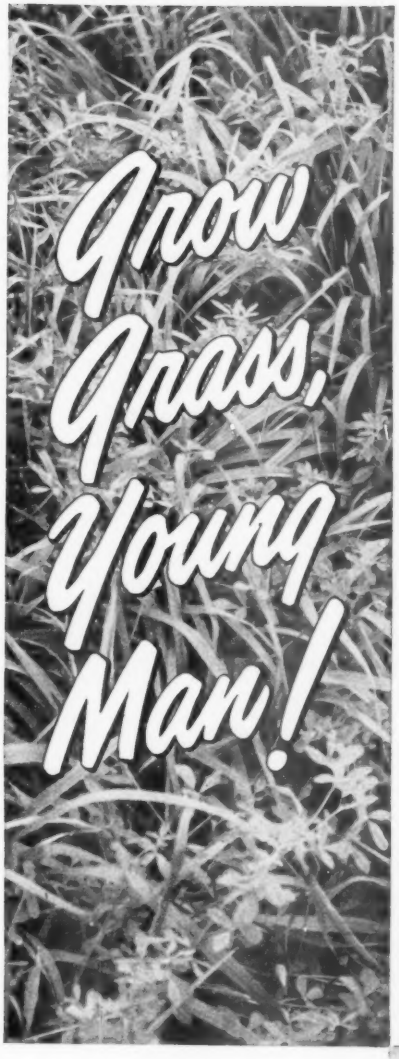
Judging PICTORIAL

How Would You Place These Columbia Rams?

(See Page 39 for correct placing.)





A hundred years ago, Horace Greeley popularized an idea: "Go West, young man, and grow up with the country!" If Greeley were alive today, he might well join the modern refrain: "Grow grass, improve the soil, and increase production."

Fitting naturally and logically into soil conservation farming, grass has become one of America's new frontiers. As a nation, we are suddenly aware that grasses and legumes are not only great soil holders but also great soil builders. And, thanks in part to better grass management, we have suddenly realized that grasses and legumes are money-makers, too.

So grass becomes a new frontier—one with lots of room to grow. The U. S. Department of Agriculture reports that of about 1 billion acres now in grasslands, probably not more than 10 to 15 per cent is improved. Yet there is ample evidence that many of these acres could produce up to six times as much as they are now producing.

Thus, history repeats itself. A century ago pioneers were putting sod-busters to endless fields of waving prairie grasses. Today, farmers all over the country are rebuilding grasslands anew. Modern farm equipment makes the job easier, faster, better.

* * *

BELOW—On a Florida cattle ranch, grass *is put to work.* This tract was once covered with natural browse, rugged but unpalatable grasses, palmetto, briars, and bushes. The scrub was eradicated, the field fertilized and established in highly-productive pasture grasses and legumes. When the picture, below, was made last year, this field was growing a good crop of grass—but not good enough. The owners knew it was time to renovate—a speedy, easy task with modern equipment.

JOHN DEERE

Moline, Illinois

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the modern "Tripl-Filtring" MILK FILTER DISCS

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What's New In . . .

Dairy Husbandry

By E. J. PERRY
Rutgers University

● ONCE CORTISONE is obtainable at an economical price, its use in the treatment of ketosis will probably become routine. Workers at the Maryland Experiment Station treated 13 cows intra-muscularly each with 1,500 mg. of cortisone. All but two recovered without further treatment. These two were also afflicted with metritis and had to be treated also with penicillin. The investigators say that a combination of cortisone and glucose shows good promise for curing ketosis (acetonemia).

Study Open Shed Housing

The open shed versus conventional type of housing for dairy calves is receiving more favorable attention in many parts of the country. At the Washington Experiment Station 57 calves were put in the open shed and 34 calves in the regular barn at three to seven days of age. The open shed calves were healthier but didn't make quite as economical gains as the others.

The death rate from all causes however was 24 percent among the conventionally housed and 2 percent among the open-shed calves. The prevalence of scours was the same for both groups, but 86 percent of those in the regular barn had to be treated as contrasted with only 17 percent among those under the open-shed system.

Considerable interest has developed recently in the use of sulphur dioxide gas as a preservative for grass silage. The most important reason for this interest is the low out-of-pocket cost of the gas. When the material is applied to chopped green material in a silo the gas combines with the moisture in the grass and forms sulphurous acid. This acid either kills or delays the activity of bacteria which usually produce, through fermentation, lactic and acetic acid and alcohol. Being an inorganic acid, it cannot be utilized by animals for food.

Work done at the Pennsylvania Experiment Station showed equal feeding value for timothy and clover silages preserved with corn and cob meal, and with sulphur dioxide. The amount of corn and cob meal used per ton was 200 pounds and of sulphur dioxide five pounds. Feeding as much as 60 pounds of the silages per cow daily had no detrimental effect on the health of the cattle.

An interesting study has been made on several hundred dairy farms in Illinois. The object was to learn whether or not dairymen with herds in Dairy Herd Improvement Associations for 10 years or more had obtained better total farm operating efficiency than did those dairymen whose herds had never been tested for production. Rate of interest earned on investment, and the earnings netted per acre were the measures of efficiency.

Farms with herds tested for 10 years or more in DHIA had a rate of 14.74 percent earned on total investment and a net earning of $30.12 per acre. On non-DHIA farms the earned rate on investment was 9.72 percent and the net earnings were $19.11 per acre. Most of this difference was accounted for by the fact that the cows in DHIA herds had an average yearly butterfat yield of 336.9 pounds per cow, whereas those cows in the non-DHIA herds averaged only 277.4 pounds.

Time Machine Milkers

In milking trials with machines in Kansas workers used 102 cows of four breeds and found that the average milking time was 3.5 minutes.

It was noted with interest that the daughters of some bulls milked out considerably faster than the daughters of others—thus indicating that degree of milk "let down" is an inherited characteristic. In selecting bulls it is well to know something about the ease and rate of milking of the near relatives, especially of the daughters if the bull is proved.

About 76 percent of the milkings required four minutes or less, and 39 percent took 3 minutes or less. During the peak of yield the time ranged from two to seven minutes.

Machine Can Injure Cow

Pennsylvania Experiment Station workers found that leaving the milking machine on a cow too long can injure udders seriously. Each cow was milked twice daily. A teat cup was always removed from one teat at the end of five minutes, from another in 10 minutes, from another in 15 minutes and from the other after 20 minutes. After 30 days the cows were killed, and the teat linings examined.

The membranes of the teats milked for 15 or more minutes were in bad shape with acute inflammation near the base of the teat. White cells indicative of a diseased condition were present in the milk

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from the inflamed quarters.

Thus it appears that leaving the teat cups on longer than necessary means running quite a risk. When the cups start to crawl against the udder floor, stripping with the machine should be done at once. Fast milking pays. Most cows when properly prepared will milk out in 3½ to 4 minutes.

The strong new type of single service paper towel that can now be bought in quantity lots at a reasonable figure is proving satisfactory in preparing cows for milking. Dairymen who use them seem to be well pleased mainly because of their convenience as compared with the cloth towels. Very few farmers feel that they can afford the trouble involved in having cloth towels for use on every cow.

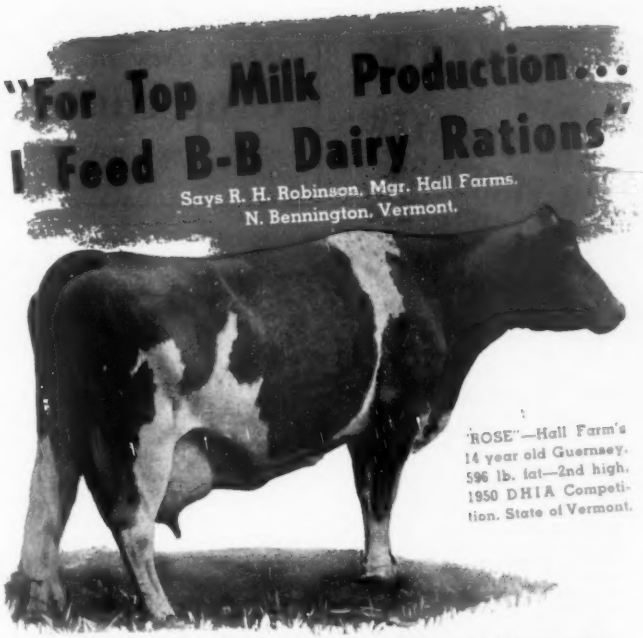
A recent experiment by the Kansas Experiment Station showed that udder cleaning was equally good with the paper or cloth and that there was no difference in the degree of "let-down" of milk of the individual cows.

Calves Gain On Aureomycin

Recent trials at different experiment stations show significent growth gains by calves fed some aureomycin. At Cornell university the supplement gave average daily gains of 1.16 pounds compared to .95 for the same number of control calves and a little less feed was required per 100 pounds of gain. The Louisiana Station got approximately 20 percent faster growth but the extra gaining stopped after 20 weeks. Positive results were also obtained at the Iowa Station. The tendency to scouring was also reduced by this antibiotic.

While these reports are promising, there is general agreement that more research is necessary in order to learn the optimum length of the period of feeding and the correct amount of supplement to use.

"If you ask me, he's on the verge of a nervous breakdown."


"For Top Milk Production . . .
I Feed B-B Dairy Rations"
Says R. H. Robinson, Mgr. Hall Farms,
N. Bennington, Vermont.
"ROSE"—Hall Farm's 14 year old Guernsey. 596 lb. fat—2nd high, 1950 DHIA Competition. State of Vermont.

Hall Farm's 95 cow Guernsey Herd is made up of 25 reg. and 19 grade cows with 34 reg. and 17 grade heifers and calves. For two years now, Mr. Robinson has been a 100% Bull Brand feeder — using B-B 16%, B-B DRY AND FRESH and B-B CALF STARTER. Comparing milk records made in previous years on other feeds — Mr. Robinson concludes that the dependable B-B feeding plan is definitely a change for the better. The Complete B-B line provides a ration for every feeding need,— for instance:

IF YOU ARE TROUBLED WITH COWS OFF FEED . . . try B-B DRY AND FRESH. The extra amounts of mineral supplements and fine character of other ingredients will encourage the appetite of the most fussy cow. She'll come back on feed faster and throw off her upset quicker. Ask your B-B dealer about this all-purpose ration!

HOW TO BUILD CALF FEED BOXES

1. Calf ration box for individual pens should be 8" x 10" x 6" deep. Make boxes removable for cleaning.
2. When calves are raised in groups, make calf ration feed boxes 10" x 6" deep, allowing 2 ft. per calf. Two troughs per pen are preferred.
3. Top of calf ration feed boxes should be 20" from floor.

Locate feed boxes at front of individual pens away from waterer. For calves fed in groups, locate boxes where convenient but away from waterers.

—Source A. P. M. A.

FREE—36 page Complete Dairy Feeding Guide. Formulas, feeding plans and management helps. Your B-B dealer has one for you—or write to:

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There are so many spraying jobs to be done in every area that you will find a custom spraying service profitable on either a full, or part-time basis. You can sell this service for brush and weed control, pest control in fruit or shade trees, fly and mosquito control, livestock parasite control, cleaning poultry houses, whitewashing and many other activities.

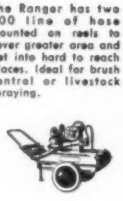
JOHN BEAN HAS THE SPRAYER THAT'S RIGHT FOR YOU

John Bean sprayers are available engine powered as trailers or skid mounted. Tractor power take-off models also, with many variations in tread and clearance.

There is a full range of output from 3 to 60 gallons per minute, and at pressures to 500 lbs. Selection of tank capacity can be made in accordance with the type of spray jobs you will do.

The Ranger has two 200 line of hose mounted on reels to cover greater area and get into hard to reach places. Ideal for brush control or livestock spraying.

The portable, engine-powered Spartan sprayer provides effective high-pressure spraying at minimum cost. Write for custom spraying manual and catalog on John Bean custom sprayers.



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LANSING 4, MICHIGAN
SAN JOSE, CALIFORNIA
Division of Food Machinery and Chemical Corp.

What's New In . . . Crop Husbandry

By H. R. LATHROPE
Purdue University

● THE NEED FOR EFFICIENT production of farm crops was never in greater demand. Farmers need to grow two blades where one grew before. These two blades, or maybe three or four, need to be produced more economically. Production costs are too high.

Balanced plant nutrients are becoming more and more important. Time was when authorities recommended only phosphorous (0-20-2) for many crops. Today plant scientists are concerned with balancing the supply of nitrogen, phosphorus, and potash according to the plant needs.

Farm folks are rapidly becoming acquainted with the role of nitrogen, phosphorus, and potash as well as calcium, magnesium and other elements in plant growth. "The internal plumbing of the plant," according to Dr. G. N. Hoffer, American Potash Institute, "is becoming tremendously important because of the increasing difficulty of picking corn that lodges because of lack of potash in the soil."

Nitrogen Is Important

Farm folks are aware of "corn firing" because of the lack of a plentiful nitrogen supply in the soil at the time when corn is making its greatest demand on the soil for food. In 1951, 80 percent of the corn in the corn belt "fired" for lack of nitrogen. Deficiencies are now less likely to be blamed on the weather or the seed or variety.

Farmers are becoming more keenly interested in the use of liberal amounts of fertilizer for use in building their fertility rather than just applying minimum amounts for fair production. Scientists are now saying that; "It's not always the first few pounds of fertilizer that return the best profit but many times it's the last few pounds that make it pay best."

It pays to grow sweet clover as a cover crop in corn. Heavy stands of deep rooted, 48 inches deep sweet clover, six plants per square foot do much to improve the tilth of the soil, increases the population of soil microorganisms, open up tight subsoil and hard pans or plow soles, and provide from 100 to 200 pounds of nitrogen per acre as well as 2,000 to 3,000 pounds of dry matter (organic matter-food for soil microorganisms) per acre.

The percentage of legumes in the corn belt is miserably low (around 10 to 15 percent). If legumes are grown successfully on 25 percent of the land, the soil tilth can no doubt be maintained at its present level or improved, better than by any other manner.

New Wheat Varieties

Improvement in the production of wheat has been slow. Because of the rapid strides in corn and soybean production, possibly less attention has been paid to wheat. But during the past 20 years great strides have been made by plant breeders in the improvement of new lines of wheat which are resistant to smuts, rusts, insects, and standing ability.

New strains of wheat, particularly soft red winter wheats, are now on production lines and will be ready for farm folks in the near future. Farmers will be happy with these short, stiff-strawed varieties which stand exceedingly well and will be practically immune to leaf rust and smuts.

Test With Fertilizer

Some of these new lines have been tested in the past few years with rates of fertilizer as high as 100-200-200 with no lodging. These wheats were tested at these high rates which are considerably in excess of that used by even the most advanced users of fertilizers, in order to determine their standing ability. Several hundred new lines of wheat will be continually tested and continually improved.

The problem of the plant breeder will be one of choosing between many lines that are far better than anything producers have had to work with during the past years.

Develop New Plant Tests

The development of quick field tests for nitrogen, phosphorus, potash, magnesium, and calcium in plant tissue has done much to enable farmers to make more efficient use of their fertilizer and cropping systems. The Bray test is being carried in the pants pockets of thousands of farmers in the Midwest as well as in many foreign countries. One of Denmark's agronomists visiting at Purdue this past summer brought with him a Bray test kit. The Purdue kit is being used by farm folks everywhere in an effort to make inventory of the soil and/or to determine the need for more careful soil testing services.

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Proven by Field Performance!

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Genitox* S-75 Spray Powder (75% DDT)
Genitox S-50 Spray Powder (50% DDT)
Genicop* Spray Powder (DDT-Neutral Copper)
Genitol* EM-25 (25% DDT Emulsifiable Concentrate)

PARATHION

Genithion* P-25 Spray Powder (25% Parathion) (Formulated to reduce dust)
Genithion P-15 Spray Powder (15% Parathion) (Formulated to reduce dust)
Genithion PEM 250 Emulsifiable Concentrate (25% Parathion)
EM 4-25 Parathion—DDT (4% Parathion—25% DDT)
EM 5-25 Parathion—DDT (5% Parathion—25% DDT)

BENZENE HEXACHLORIDE

G-12 BHC Spray Powder (12% Gamma Isomer)
BHC Emulsifiable Concentrate (1.6 pounds Gamma Isomer per gallon)

LINDANE

25% Lindane Spray Powder
20% Lindane Emulsifiable Concentrate
75% Lindane Seed Treater

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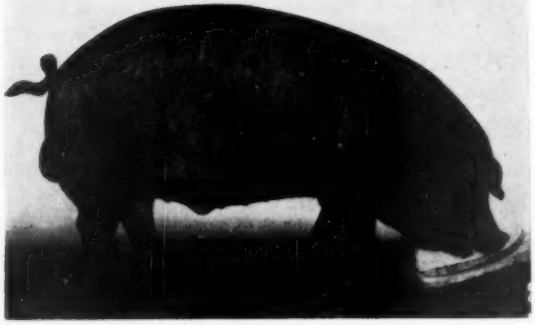

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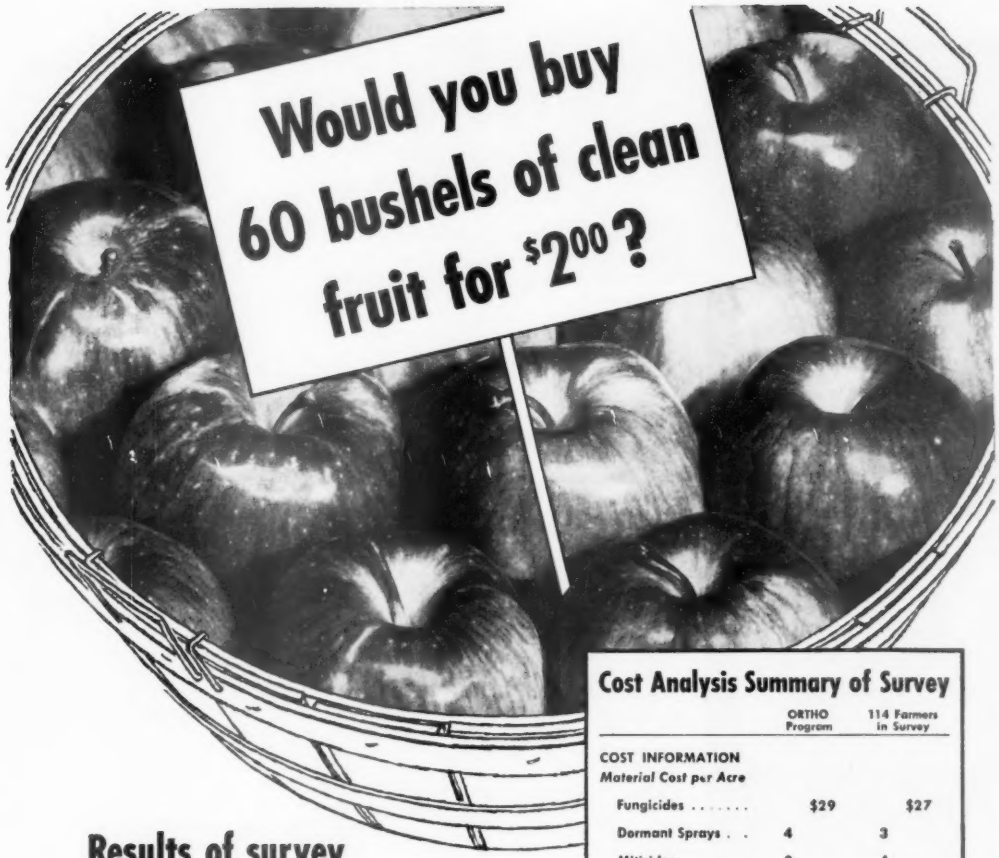

Results of survey among 114 apple growers:

All 114 Farmers: Average reported marketing 83% clean fruit or a net (at the average yield rate of 400 bushels per acre) of 332 bushels.

***ORTHO* Users:** Reported marketing 98% clean fruit or a net (at the average yield rate of 400 bushels per acre) of 392 bushels. Additional cost of an *ORTHO* program was $2.00.

Bonus Yields for *ORTHO* Users: 60 bushels of clean fruit for an extra expenditure of $2.00.

Cost Analysis Summary of Survey

	ORTHO Program	114 Farmers in Survey
COST INFORMATION		
Material Cost per Acre		
Fungicides	$29	$27
Dormant Sprays	4	3
Miticides	3	4
Other Insecticides	27	25
All Insecticides	34	32
Hormones	1	3
Total Material Cost	$64	$62
CONTROL INFORMATION		
% of Clean Fruit Picked	98%	83%

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What's New In . . .

Sheep Husbandry

By E. P. ORCUTT
Montana State College

● THERE WERE SOME LAUGHS at the bare suggestion only a few years ago when the question was raised: "Do some ewes actually breed and conceive and then fail to produce even a dead or a 'sooner' lamb?" Two Montana experiment station workers, didn't laugh and they didn't just exactly set up an experiment to find out either. But they have made some surprising observations.

Over a year ago, after the first two winters of research, Van Horn of the Montana station worked out some additions to his range ewe wintering experiment which has already been discussed in these columns. "Flushing" some of the ewes was one addition and wintering some on a still higher plane of nutrition was another.

When the lambing figures were tabulated last spring it looked as though Van Horn might have uncovered a surprising side light, namely that 56 ewes composing group C produced more live lambs than groups A or B even though they were fed and bred together. The difference in their treatment lay only in the feeding and wintering after breeding. What became of the lambs? Surely breeding and conception would be the same for all groups.

The following table presents all of the pertinent data on this one phase in connection with the winter nutrition experiment. The headings of the columns must be studied and familiarized as well as the line-titles. It was difficult to arrange such a table so as to be easily understood but, even so, this form of reporting is the only way to present all of the results.

All three of the groups, A, B, and C, bear out the observation that resorption of the fetus must have occurred in order to account for the sharp differences in the lambing percentages. All three groups were handled together before, during, and until the end of breeding. Only then were three different levels of nutrition begun.

Group A received nothing but range grazing. Group B grazed every day with the A ewes but received their one-third pound of pellets each morning before leaving camp. Group C was taken from the band at the end of breeding and moved to the Fort Ellis farm and really full-fed on two-thirds of a pound of 20 percent protein pellets per day and a full feed of mixed and alfalfa hay. (Groups A and B constituted the true "Protein Nutrition Levels Experiment" which is

LAMBING DATA

TREATMENT		NUTRITION BAND		
Treatment before and during breeding.		All sheep were in the same band before and during breeding. Breeding started November 23. Rams taken out December 28.1/ Range grazing daily.		
Separated into groups at end of breeding.		Group A	Group B	Group C
Treatment after breeding during winter.	Concentrate	No Pellets	1/3 lb. per head per day. Fed in 4 groups. Range of 10% to 40% protein in pellets.	2/3 lb. per head per day of 20% pellet.
	Roughage	Grazing on range. Groups A and B grazed together during day.		Full feed of mixed & alfalfa hay (at Bozeman)
RESULTS		Group A	Group B	Group C
No. sheep on experiment		55	971	56
No. sheep lambing		40	616	48
Percent with live lambs of ewes at lambing		63	80	85
Percent dry ewes		26	16	11
Percent having dead lambs		11	4	4
Percent live lambs recorded of ewes at lambing		80	105	117
Percent of multiple births of ewes at lambing		17	24	32
Percent of two year olds on exp. that did not lamb		50	31	17

1/ Pellets were fed to this band prior to breeding, but the weather conditions were bad and the ewes weighed about the same at the start of breeding as they did 17 days earlier.

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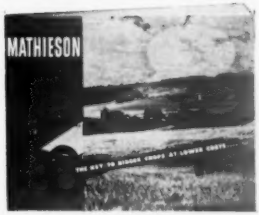

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now in its fourth winter. Protein levels vary from "O" through 10-20-30-40 percent. The third winter of this experiment was reported here in *Better Farming Methods* a year ago.)

Compare Live Lambs

Two significant sets of figures appear in the table: Group A produced 80 percent live lambs, group B produced 105 percent live lambs and group C, those on the highest feeding level, produced 117 percent live lambs. All three groups received the same identical treatment before, during, and until the end of breeding. They must have been bred at the same rate. There seems to be no possible reason for different fertility or different conception.

What, then, became of those unborn lambs?

Another important set of figures is in the last line of the table. The two-year-old ewes present the same kind of results. Everyone knows that "coming two's" are in their most critical winter after they have been bred for the first time. These plane-of-nutrition "coming two's" present the exact results that an experienced sheepman would expect if he was considering this question of possible resorption. The highest percentage of dry two's were in group A and the lowest percentage was in group C. And look at the numbers as well as the percentage—27 dry ewes in "A" as against only 10 dry ewes in the "C" group! A difference of 33 percent in the lamb crop from two-year-olds will pay for a lot of winter feed. And a difference of 37 percent in the lamb crop among all of the ewes will pay for even more feed.

Results Not Conclusive

Van Horn is careful and cautious. He is not willing to call these results from only one winter "conclusions." He intends to repeat this kind of study and average the results and make findings from larger numbers before any "conclusions" are reached. Several points are worth noting.

1. The lamb production from ewes which were bred in the same band but fed greater amounts of feed after breeding was different.
2. The ewes in the band receiving the most feed had 37 percent more lambs than those receiving the least feed.
3. There were 15 percent more dry ewes in the group on the lowest level of feed in the same band.
4. There were more twins born in the groups on the higher levels of feed.
5. There was a great difference in the reaction of two-year-old ewes to the levels of feeding. The difference between the percent of drys in groups within bands was 33 percent.
6. It appeared that ewes responded to higher levels of feeding after breeding as well as before and during breeding.

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What's New In . . .

Swine Husbandry

By DEAN C. WOLF
Iowa State College

● COMFORTING TO THE hog man faced with narrower feeding margins are developments this past year to help him improve the efficiency of his operation. Rather sweeping developments unfolded in the areas of management to cut the mortality rate of baby pigs and in feeding to improve gains and step up feed utilization.

Farrowing Stalls Save Pigs

The idea of using farrowing stalls to save baby pigs from crushing by the sow has swept the hog production areas of this country like a grass fire. Estimates blame 50 percent of the loss of early farrowed pigs on chilling and crushing. In later farrowings, losses are mainly from crushing. Producers report near phenomenal success with the farrowing stalls. Not uncommon is the report from one farmer whose sows killed only six pigs at farrowing time and he farrowed a total of 600.

E. L. Quaife, extension swine specialist at Iowa State college and one of the early advocates of the farrowing stall, reports that requests for plans are coming in from all over the United States and some from foreign countries. At the National Barrow Show alone, 600 requests were made for plans of the farrowing stall on exhibition.

"The farrowing stall is so practical and can be so easily built that it has a ready appeal. On most farms enough material can be found to build one or more such stalls without outlay for material," Quaife said.

Antiobiotics Score

Faster gains, more pork from a pound of feed, and less trouble from necrotic enteritis is the gist of the story of feeding antibiotics to pigs. At the Iowa station where more than 2,000 growing-fattening pigs have been fed the antibiotics, this summary of performance is reported: 10 to 20 percent faster gains, 20 pounds of feed saved in producing 100 pounds of pork, more uniform pigs, and a reduction in necrotic enteritis.

Based on experiments to date, Dr. Damon Catron, in charge of swine nutrition work at the Iowa station, recommends feeding antibiotics at the level of five milligrams per pound of total ration. Where the disease level is high or when runt pigs are being fed, however, the level should be higher.

Young pigs have responded more than older pigs in tests. The importance of putting antibiotics in creep rations has been demonstrated. Pigs getting antibiotics in creep rations weighed five to ten pounds heavier at weaning in Minnesota tests.

Can Save Runt Pigs

Antibiotic feeding has given runt pigs a new lease on life. In Iowa tests, aureomycin and terramycin saved pigs weighing around 20 pounds at 72 days of age—pigs that weren't given much of a chance of living. With antibiotics in the ration, these pigs made 56 percent faster gains than similar pigs on a good ration. The basal ration consisted of 10 percent meat and bone scraps, 5 percent alfalfa meal, vitamins A and D, and minerals including trace minerals. The antibiotic ration improved gains by 42 percent over the old home remedy of all the skimmilk pigs would drink twice daily.

Protein Levels Too High

Recommended protein levels for growing-fattening pigs were probed into by the Iowa station. Findings—generally recommended levels of protein are too high. The tests show that a 14-12-10 percent protein level combination does as well as higher levels of protein for pigs in drylot from weaning to market. The 14 percent level is for pigs from weaning to 75 pounds, the 12 percent from 75-150 pounds and the 10 percent level from 150 pounds to market weight.

Research upon which recommended levels of protein were based was conducted nearly a decade ago. They were made before these important discoveries now being applied in building modern rations: (1) The establishment of the importance of water soluble B-vitamins, (2) isolation and bacterial synthesis of vitamin B_{12}, (3) the discovery of the value of antibiotics in swine rations, and (4) the evaluation of trace minerals. Some protein feeds were supplying some of the needed vitamins but all the credit was going to protein. Protein was stealing the vitamin show. And aureomycin does something when in the ration to reduce the amount of protein needed.

Synthetic Sows' Milk

Raise pigs without milk from the sow? That has been done successfully by the Pfizer Company, Brooklyn, N. Y. Nearly 3,000 pigs have been raised when Terra-

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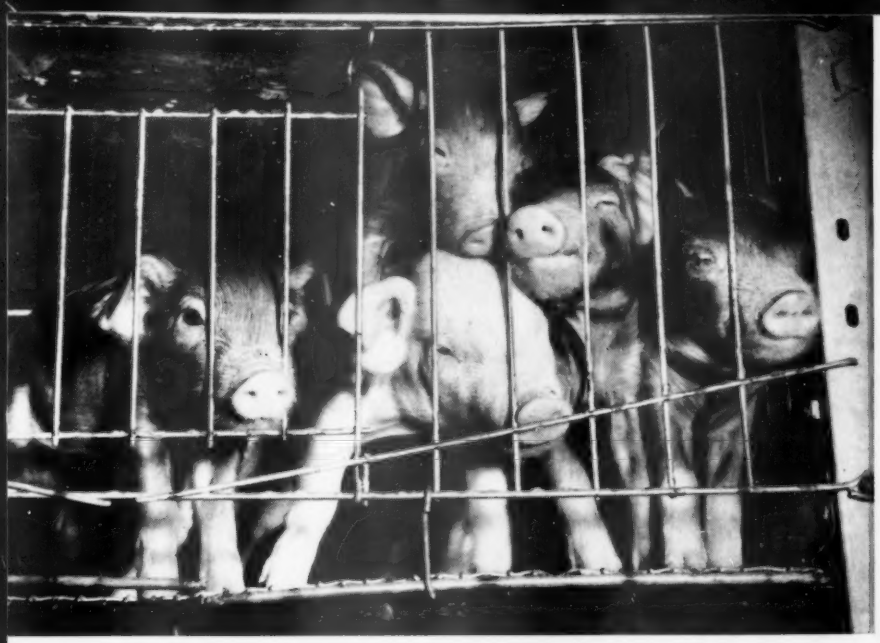

Pigs being raised on Terralac (Pfizer's latest development in swine nutrition) in Pfizer's Brooklyn laboratory. More than 5,000 pigs have been raised on Terralac—in laboratories, at state experiment stations, and on farms.

Get the whole story on these famous pigs

The news of Terralac, the complete replacement for sow's milk, which was made possible by Terramycin, has flashed from coast to coast. The story of this new way of life, which makes it possible to raise pigs away from sows, was carried in the national magazines, the farm press, in newspapers and on the radio.

There has never been so much interest in any one thing connected with hog raising. Experienced hog-raisers are saying that this new way of life for baby pigs can improve the production of hogs in the entire nation.

We have new bulletins on Terralac describing the methods by which thousands of pigs have been raised the Terralac way, which will be sent promptly upon request. No charge, of course. Use the coupon, or a postcard for the latest news on antibiotics from Pfizer, discoverers of Terramycin and world's largest producer of antibiotics.

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lac, a synthetic milk containing terramycin, was substituted for sow's milk. Dr. Herbert Luther reports that the pigs averaged 10 to 25 percent heavier at 28 days of age than pigs getting milk from the sow. By taking pigs away from the sow before they are two days old, it is hoped to reduce losses of baby pigs. The system appears most applicable by pig hatcheries.

★

This Corn Cost 46 Cents per Bushel

By Lloyd Redd
County Agent, Missouri

● "I WANT TO raise 100 bushels of corn per acre on that field north of my house," said Edward Hess as he handed a soil sample from the field to the county agent in Clark county, Missouri.

When the soil had been tested, Hess received a report showing that the field needed at least 140 pounds of available phosphorus and 80 pounds of exchangeable potash. Organic matter, carrying the available nitrogen, was fairly high, but not high enough to supply the 200 pounds of nitrogen per acre that would be needed for a 100 bushel corn crop. Hess had limed the field twice and the test showed that the soil acidity had been corrected.

Land Needs Fertilizer

The county agent knew that the field had been in corn six years before, and that the yield had been no more than 70 bushels at best. That had been a good corn season, too. Following that corn crop, Hess had seeded oats, clover, and timothy.

After a year in meadow, he had disced the field and drilled wheat, with 200 pounds of mixed fertilizer. During the winter, the field got a top dressing with manure from the Hess dairy herd. The wheat crop made above 40 bushels per acre, and clover had volunteered from the previous crop. Hess had top dressed the meadow in the spring of the second year, using 100 pounds of ammonium nitrate per acre. The hay yield was double that of the previous year.

Both men knew that the field could be expected to deliver enough nitrogen for a 40-50 bushel corn crop. Crop residues, including nitrogen fixed by legumes, might add enough additional nitrogen for another 20 bushels per acre. To reach 100 bushels, more nitrogen would be needed.

The prescription for a 100 bushel yield called for 300 pounds of 45 percent

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superphosphate, 12 pounds of 60 percent potash and 200 pounds of 33 percent ammonium nitrate. This plant food was to be plowed under, so that it would be readily available to the root system. In addition, it was recommended that 200 pounds of 3-12-12 be used in the planter. This plant food, placed beside the young plants, would give them a quick boost and help develop a root system that would soon reach the heavy application lying at a depth of eight inches.

A heavy stand of corn was also necessary if the crop was to yield 100 bushels. Regardless of plant food used, a 100 bushel crop just can't be grown on a thin stand. The agent recommended planting 12 inches apart in standard 42 inch rows.

120 Bushel Crop

At harvest time, Hess found that he had overshot his goal just a little. The corn made 120 bushels per acre, on the basis of 1 percent moisture, and the quality was excellent. Just about 50 bushels to the acre more than he got from the last corn crop on the land.

Hess spent a lot of money for fertilizer —$23 an acre for nitrogen, phosphate and potash. His crop used up about all the nitrogen but he still had most of the potash and phosphate for succeeding crops. The extra 40 bushels of corn cost him exactly 46 cents per bushel.

He made approximately $50 per acre profit, not to mention the extra fertilizer still in the soil for succeeding crops.

A neighbor said: "That's a lot of money for fertilizer." Hess replied, "It did cost a lot, but it would have cost more not to have used it."

★

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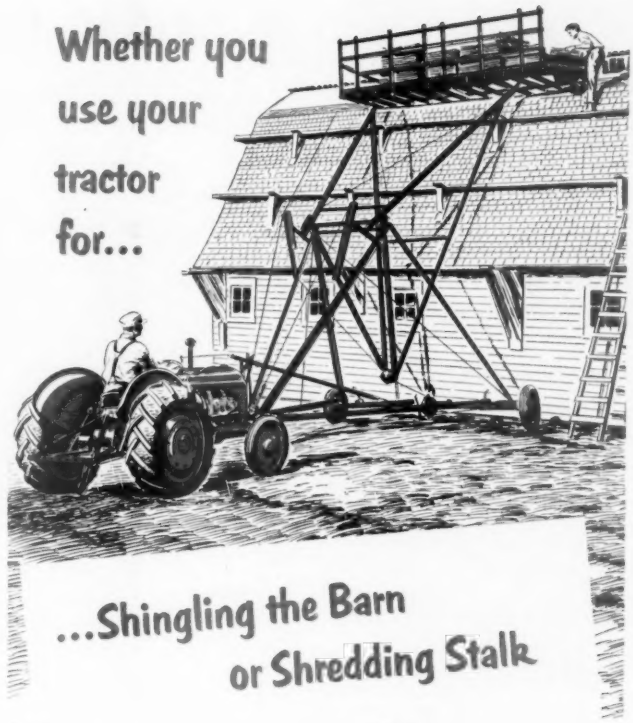
No. 2 ram places over No. 1 in both type and conformation. No. 2 is especially strong in breed type, a head nearly as good as No. 3, but the top line and including rump not as level as No. 3 or No. 4 rams.

No. 1 ram is placed last for both type and body conformation. The head is plainer than the heads of the other rams, shows less masculinity and the body is narrower and top line not as straight.



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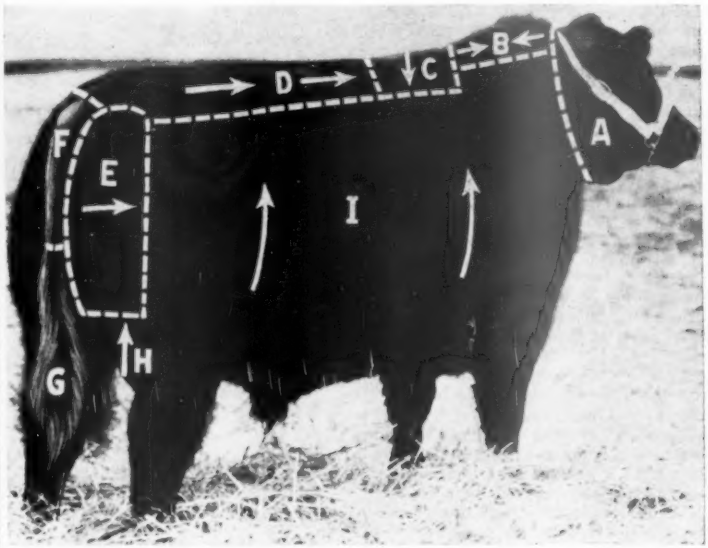
A Study On Grooming

(Photos Courtesy Sunbeam Corporation)



Every FFA member and 4-H Club boy or girl should know how to properly clip and groom an animal. Every animal can be made more attractive by proper grooming. The above diagram shows the various points on the body of an animal which should be groomed before entering the show ring. In the following pictures and captions, reference will be made to the various parts of this diagram. Use it to learn where and how to groom an animal.

The head should be clipped except the ears and eyelashes. The shaggy hair on the ears should be clipped, with the exception of Angus. Be sure to clip polled and dehorned steers. Note the accompanying head photo which shows a perfectly clipped Angus head. Brush the hair to a point on the crest (B). On females, the hair is parted on the crest.

(Please Turn the Page)

This picture shows how the hair is parted over the shoulders (C) and brushed out both ways from the backbone. The back at (D) can be dressed several ways. It may pay you to try all of them to see which one works best for your particular animal. First, curl the hair. Second, you can brush the hair forward to a junction with (C); or toward the backbone on each side; or part the hair along the topline and brush out, similar to the part and way the shoulders (C) were brushed; or leave it uncurled, smooth it down tight, and brush back all the way.

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BRIMM has definite advantages for crops grown in certain sections. With factories located in these areas, Swift makes BRIMM to meet the varying needs of different crops and soils. Thus, BRIMM does an outstanding job of supplementing and balancing your soil nutrients . . . no matter where your farm is located. It is particularly effective in truck crop land in the East, Southwest and Pacific areas. In the South, there is no finer plant food than BRIMM for corn or cotton.

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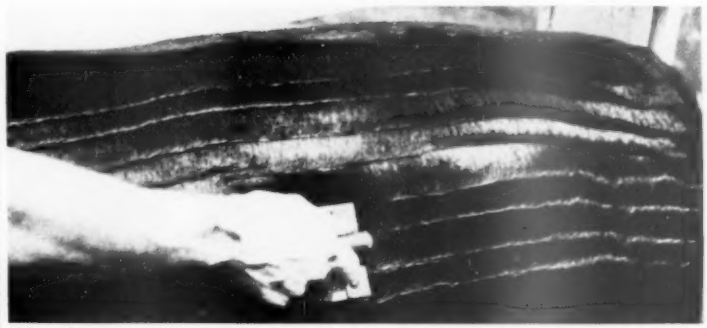
You may have use for additional information on plant foods and their use, either on your farm or in your work. If so, please visit with your Authorized Swift Agent or dealer. He either has the information or can get it for you promptly. For your actual plant food needs this season, we suggest you order your BRIMM early.

The rear of the animal requires careful grooming. At point (E) on the hind quarters, brush the hair out from the tail to give width. The photo at the left shows the rear view of a properly groomed animal. Note how the tail has been fluffed, and how the hair is brushed out from the tail to give width. In the photo directly above, the proper procedure for clipping the tail is shown. Clip the tail from the point where the twist is pointed out by the position of the clipper and the hand pointing from the left. The hair on the lower inside of the hind quarter, shown at (H) on the diagram, should be brushed up.



The hair on the legs, quarter, side, and shoulder, shown at (I) on the diagram, is curled and trained to stand up. This adds width to the animal, and a good three to four inches will be added if the hair is curled and brushed properly. Brush the hair up from the bottom toward the top of the back. It is best to wet the coat well, run mark lines from rear forward.

Finally, train the animal to pose properly. They should stand with their legs under each corner. Always lead from the left side and practice moving the animal so it will come into position when it stops.

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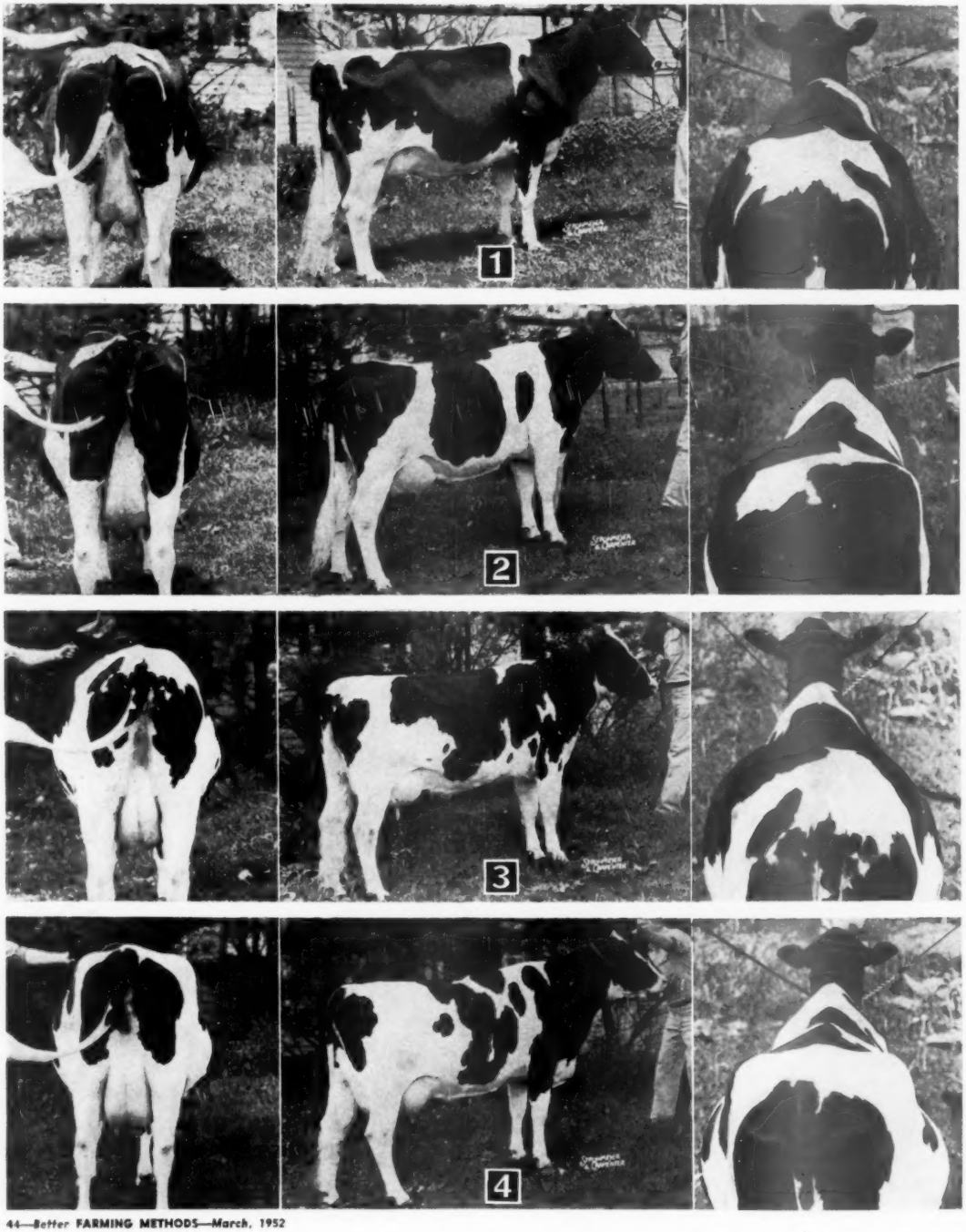
(See Page 53 for correct placing.)



Duroc Spring Boar Placing

CORRECT PLACING—1-3-2-4

In this class, No. 1 was a very outstanding boar exemplifying most of the things sought in a Duroc herd sire. He was a long bodied, deep sided, thick, meaty boar with sufficient substance, yet he had quality and smoothness.

As compared to No. 3 the No. 1 boar had much more Duroc character about the head, being cleaner and trimmer; he was longer, deeper, thicker, and smoother in the side, much deeper in the flanks, fore and rear, longer and leveler in the rump, and deeper and fuller in the ham. No. 1 also had a much stronger and straighter set of legs than was evident on No. 3. From the rear view No. 1 stands exceptionally well on his hind legs and has exceptional depth and smoothness of ham.

No. 3 was placed over No. 2 because he was a somewhat longer and deeper-sided boar with greater width across the rump and through the ham. From the rear view, No. 3 had a more desirable set of hind legs.

However, No. 2 appears to be cleaner about the head and trimmer throughout with more balance and symmetry.

No. 2 placed over 4 because he had much more Duroc character about the head and ear, and was much more shapely, with greater balance and symmetry throughout than No. 4. No. 2 was stronger in the top and deeper in the ham as seen from the side. He was a trimmer middled, straighter underlined boar with more quality throughout than No. 4.

As seen from the side, No. 4 was a long-necked, coarse-headed, unshapely boar, that lacked the quality of the others in the class. He is particularly coarse in front and lacks depth and fullness of fore rib.—*Jim Hillier, Animal Husbandry department, Oklahoma A & M.*

★

Wheat Stem Rust to Stay

Race 15B, the most virulent race of wheat stem rust ever found in North America, is apparently here to stay for a while. It was found from Mexico and Texas to Minnesota and the Dakotas and from Pennsylvania and Virginia westward to Colorado and Montana.

There are two sources of 15B in the upper Mississippi valley. First, rust that may be blown northward from the south, where it can persist throughout the year. Second, it can come from infected barberry bushes in the northern states.

Progress has been made in developing varieties of wheat resistant to 15B but none are ready for distribution. Some do not have the necessary quality, and the resistance of others is doubtful, especially since it is known that certain varieties may be resistant to 15B at moderate temperatures but susceptible at high temperatures.

An especially effective combination of sulfonamides has been chosen in the formulation of Streptazine Tablets. Since dihydrostreptomycin and sulfaguanidine are only slightly absorbed from the digestive tract, their presence in this concentration creates in the gut a medium unfavorable to the growth and multiplication of E. coli.

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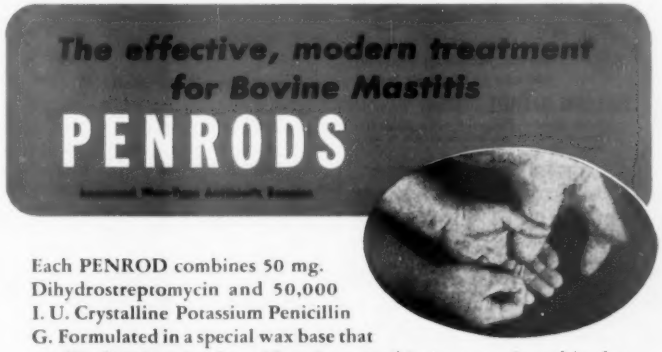
Streptazine Tablets are available in bottles of 25 and 100. Ask for them from your veterinarian.



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What's New In . . .

Soil Husbandry

By **FIRMAN E. BEAR**
Rutgers University

● A NEW CHAPTER was written in our agricultural book of knowledge during the meetings of the American Association for the Advancement of Science in Philadelphia on December 29, 1951. At that time three papers on "synthetic polyelectrolytes" were presented for the consideration of the soil scientists in attendance.

The important point about all this is that we now have a chemical method for improving the physical properties of soils. Until these new synthetic agents were developed our best means of dealing with this problem was through the use of sod crops, manures, composts, and cover crops.

When soil is dried through the action of the sun, the roots of growing plants, or freezing temperatures, the gelatinous substances produced by soil microorganisms from these organic materials serve to shrink the clay into granules and greatly improve the soil's working qualities. But organic matter rots rapidly and must be continually renewed. The new synthetic organics appear to be much more effective granulating agents than those of plant origin and to have much longer-lasting qualities. They hold great promise.

Gypsum Improves Soil

Gypsum, commonly known as landplaster, is another fairly effective chemical agent for improving the physical properties of certain soils. In the west it is used as a means of chasing the excess sodium out of alkaline irrigated soils, and large tonnages are used for this purpose.

But gypsum is now being used also in humid climates to recondition soil that has been compacted through the use of the tractor and other heavy machinery. If the water can be readily drained away after it has gotten through this compact layer, which is usually in the nature of a plow pan, then gypsum can be used to excellent effect. Considerable tonnages of it are being applied at the rate of one to two tons an acre for this purpose.

Wide Use of Liquid Ammonia

Interest in liquid anhydrous ammonia continues to grow, as more and more farmers give this highly effective nitrogen fertilizer a trial. Anhydrous ammonia first came into extensive use for injection into the soil in the Mississippi Delta in 1947. There it was employed mostly on cotton. But its use soon spread to cane, corn, and other crops as well.

During 1951 around 100,000 tons of anhydrous ammonia was used in some 20 states on a great variety of crop plants. This is enough to supply 80 pounds of nitrogen to some 2,000,000 acres of land.

Some idea of the possible effectiveness of anhydrous ammonia is revealed by a test conducted by the New Jersey Agricultural Experiment Station where it was applied to corn at the last cultivation at the rate of 100 pounds nitrogen (N) an acre. The applicator placed it about four inches deep midway between the rows of corn. The land had been in grass sod the previous year.

An application of 300 pounds of 5-10-5 fertilizer was made at planting time. At the end of the season the corn that had not received ammonia appeared to be suffering seriously from drouth, the leaves being fired from the ears to the ground. The treated corn was dark green from top to bottom.

When the crop was harvested, the yields from the two areas were at the rate of 26 and 107 bushels of grain an acre, respectively.

Minor elements continue to be of great interest to many soil-crop scientists and to farmers, especially in the vast coastal-plain areas along the Atlantic Ocean and the Gulf of Mexico. It has been definitely established that much of the land in these areas is deficient in boron, manganese, zinc, or copper, or in several of these elements. To a lesser degree, this applies also to large expanses of land in other parts of the country.

Minor Elements Important

Recently, considerable time has been devoted to the study of molybdenum as a soil amendment. Solution-culture studies indicate that the molybdenum requirements of a crop like alfalfa are of the order of one part per billion parts of solution. Plants need such small amounts of the element that one would not expect any deficiency of it in the field. Yet in a series of field tests on alfalfa in New Jersey applications of one pound sodium molybdate an acre increased the average yield by over 13 percent.

In one case a farmer who had planted 75 acres of cauliflower found at harvest time that some 45 acres of it had pro-

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duced no marketable heads. The terminal leaves of these plants were twisted counter-clockwise, and the older leaves consisted mostly of the center ribs, with very little tissue attached. When younger plants growing nearby were sprayed with a solution containing 10 parts molybdenum per million, this condition was quickly remedied.

Bacteria Produce Antibiotics

A good bit of interest has been aroused in the possibility that the microorganisms that bring about the rotting of soil organic matter may produce antibiotic substances, like penicillin and streptomycin. These substances, when absorbed by crop plants, may protect them against attacks by insects and disease organisms. A considerable number of antibiotic-like compounds have been isolated from various plants. As to whether these were produced by the plants themselves or by the microorganisms in the soil on which the plants were grown, or by both, remains to be determined.

The point is that there is a growing realization of the great importance of organic matter not only as an agent for improving the physical properties of soils but for its possible value as a source of antibiotic substances as well. There is the further known fact that weeds and cover crops are important agents for mobilizing the necessary supplies of minor elements required by crops.

One highly important reason why backyard compost piles are so effective in stimulating plant growth lies in the fact that they may contain the refuse of plant produce derived from a great variety of soils in widely different parts of the earth.

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The convenience of a clipboard combined with the capacity of a brief case, that's the new clip-box now offered by National Agricultural Supply Company, Fort Atkinson, Wis. Designed especially for men who do field work, call on farmers, or conduct outdoor activities the new outfit has many advantages. A handy, easy to write on clipboard is a sliding, locking cover to a storage box. Made in two sizes.

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By Reginald H. Painter

Improved insect-resistant varieties of major crops have been developed by the author and his co-workers during 25 years of experimentation. In this book he presents the results of that work and of similar work by other investigators. He explains all that is known about the mechanisms of resistance, the factors of both plant physiology and insect biology that enter into plant resistance to pests, and the developments in insect-resistant wheat, corn, cotton, and other important crops. He gives comparative data on control by insecticides and by plant resistance, and presents a useful summary of the methods and problems of breeding for insect resistance. This book with its extensive bibliographies, will be highly valuable to all engaged in crop improvement and pest control. $9.50

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What's New In . . . Poultry Husbandry

By MORLEY A. JULL
University of Maryland

● NEW DEVELOPMENTS in the field of poultry husbandry are so numerous that it is impossible to mention more than a few of the most outstanding accomplishments. This discussion deals for the most part with problems pertaining to the biological warfare against parasites and diseases, new concepts in breeding, and growth-stimulating effects of antibiotics and other materials when fed to chicks and poults.

Control Parasites

Progress in reducing the enormous economic losses suffered by poultry producers from parasite infestation and disease infection has been remarkable, although against certain diseases relatively little progress has been made.

Since mites infest many poultry flocks, it is significant that Aramite has been demonstrated to be a good miticide. Since flies transmit disease organisms, it is interesting to note that Dieldrin can be used successfully for poisoning flies that are attracted by manure under sun porches and in other places where they are a menace.

Lindane and DDT are recommended for controlling fleas that tend to accumulate in reused old litter. A one percent Lindane dust applied to nests, beneath the roosts, and to litter at the rate of three pounds per 1,000 square feet of floor space is sufficient to control lice infestation. A 25 percent wettable powder form of Lindane (one pound of the wettable powder mixed with 24 pounds of talc or road dust) is a satisfactory substitute for the one percent Lindane dust. Treatment for lice should not be made within 14 days prior to the time any birds are marketed.

Enheptin Fights Blackhead

Enheptin at the level of 0.05 percent of an all-mash diet has been shown to be of value as a blackhead preventive in turkeys exposed to the organism that causes the disease.

Infectious bronchitis is a disease that causes serious losses in thousands of flocks of growing chickens. It is a typical respiratory infection that passes readily from chick to chick and may be carried from pen to pen on the hands or clothing of the person attending the birds.

When day-old chicks are shipped directly from infected premises, the infection is rarely carried over from the positive breeding or hatchery flock.

However, when chicks are held on the infected premises for about two weeks, the infection is often carried over. This is a strong argument against purchasing "started" chicks. It has been suggested that in sections of the country where infectious bronchitis is highly prevalent, all breed flocks used for producing hatching eggs should be vaccinated, since parentally immune chicks suffer much less mortality than non-immune chicks.

For improving egg size in a flock of chickens, mass selection is more effective than family selection.

Poultry breeders who are interested in breeding to reduce the percentage of eggs containing blood spots should practice rather rigorous selection of individuals and families on the basis of low incidence of blood spots in their eggs.

Improve Breeding Methods

Success attained in breeding for resistance to avian leucosis (fowl paralysis) is helped if random samples of chicks belonging to each family (the progeny of a sire and a dam) are exposed to the disease by brooding them in close contact with the laying flock. Families showing the lowest incidence of mortality among these exposed chicks are those from which breeding stock should be selected from among the chicks that are raised under relatively isolated conditions.

Turkey breeders often have difficulty in securing good fertility and hatchability during the late fall and early winter months. This makes poult production very expensive. Results have been determined recently that show that keeping toms in pens having a temperature of 55-60 degrees and giving them 13 hours of light for five weeks preceding the making up of the breeding pens give better fertility and hatchability than comparable toms kept under normal conditions.

Since the sale of turkey broilers increased considerably during 1951 over previous years, there is greater need for securing year-round egg production among turkey hens. Exposing them to more artificial lighting than is customary and keeping them in pens in which some heat is provided should tend to increase egg production during the fall and early winter months.

Although antibiotics were originally developed to combat certain bacterial diseases in man and other animals, much

interest has been aroused during the past year concerning the growth-stimulating effects of certain antibiotics when fed to chicks and poults. As the result of research work with such antibiotics as aureomycin, bacitracin, penicillin, and terramycin, numerous commercial broiler and growing mashes as well as mash mixtures for poults are now fortified with these antibiotics. These findings are of particular importance to broiler growers and turkey producers who sell turkey broilers.

Increased rate of growth in chicks for about 10 weeks has been obtained from adding certain commercial preparations (surfactants) used in the home laundry and dishwashing as compared with similar chicks fed the same diets except for these particular preparations. Growth stimulation was similar to that obtained by adding antibiotics to the chicks' diet.

Research Goes Forward

In a series of tests, laying hens exposed to radiation from a bacterial ultraviolet lamp laid about 15 percent more eggs than comparable layers not exposed to ultraviolet radiation.

Research work with radioisotopes in poultry nutrition has demonstrated that about 75 percent of the calcium used in egg production is obtained from the daily consumption of feed. Since the contents of the egg contains portions of nutrients consumed over a period of about 40 days, breeding flocks kept for the production of hatching eggs should be fed a breeder diet for 40 days prior to the time that eggs are saved for incubation.

Pelleted oat hulls and pelleted wheat screenings have been shown to have definite value in feeding poultry.

★

Aureomycin Speeds Growth

Calves fed aureomycin concentrate made 12 to 14 percent greater gains than like fed calves getting no aureomycin in a recent test at the Vermont Agricultural Experiment Station. For every breed, the aureomycin-fed calves gained faster than the controls. They exceeded normal growth standards by 38 pounds at the end of three months feeding and the top calf, a Holstein, was 51 pounds over.

The 15 Holstein, Ayrshire, and Guernsey calves used in the experiment received whole milk from birth to one month of age followed by skim milk at 12 weeks, together with a commercial calf starter and good quality hay. The aureomycin supplement was fed as powder added to the milk at the rate of about a tablespoon daily.

The greater gains of the antibiotic-fed calves were produced with only slightly more feed. The supplemented calves made better use of their feed, requiring 1.58 pounds of total nutrients to produce a pound of gain while the control calves consumed 1.72 pounds.

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Tobacco By-Products & Chemical Corp., Richmond, Va.

What's New In ...

Beef Husbandry

By L. S. POPE
Oklahoma A & M College

● IT APPEARS THAT the next year or two will be a critical period for the beef cattle producer. But whatever happens, it is safe to say that the producer with the best chance of succeeding will be the one who pays the most attention to the fundamentals of the cattle business—breeding, feeding, and good management. The farmer or rancher who, year after year, markets a lot of grain and roughage through quality cattle, or has a good cow-and-calf herd, will always be assured of a good income.

The importance of good management and the proper handling of beef cattle is often overlooked. As research workers, we sometimes become so occupied with new discoveries in nutrition and breeding that we forget the utmost importance of the caliber of the man who does the feeding.

"The eye of the master fattens the ox" is an old saying which has just as much meaning to us today as it did to the English herdsman centuries ago. New developments in feeding and breeding are of limited importance if beef cattle are not handled properly. Proper dehorning and castrating, treating for stomach worms and lice, or spraying with rotenone to control a future grub crop are only a few. Good management is nothing more than hard work and constant attention.

New Developments In Feeding

In this period of high feed costs, recent developments in the feeding of beef cattle are of great interest to the commercial cattleman. Much attention has been given to the "economy" of beef production—that is, to the development and fattening of beef cattle on a maximum amount of roughage or cheap pasture and a minimum amount of high priced grain and protein supplement. Research workers at Purdue, Illinois, Tennessee, and Missouri have demonstrated that a number of methods can be used which take full advantage of the "rough" feeds and pastures that go to waste on many farms.

Purdue research workers have shown that good corn silage, properly supplemented, can produce gains of 2.29 pounds per day with wintering steer calves. They formulated a "Supplement A" which contained about 65 percent soybean oil meal and 29 percent molasses feed plus bonemeal, salt, and a vitamin A concentrate.

When 3.5 pounds of this supplement per steer was fed daily, the above mentioned gains were made with corn silage; while steers fed alfalfa silage and the same supplement gained 2.12 pounds per day. Steers fed ground corn cobs and 3.5 pounds of the supplement daily gained 1.60 pounds per day over the 133-day experiment.

The Purdue workers calculated that the feed cost per pound of gain was less than 15 cents for the steers fed the supplement and corn silage or ground corn cobs.

High Protein Needed

This "Supplement A" supplied 2.25 pounds of soybean meal to the daily ration of the steers fed the various roughages. This research emphasizes the importance of supplying adequate amounts of protein to rations made up primarily of low-quality roughages such as silage, grass hay, fodder, or dry range pasture in the winter.

Often, cattlemen feel that the cost of protein supplements are excessively high and try to economize by feeding only a portion of what the animal needs. This results in a slow rate of gain and inefficient utilization of the other feeds in the ration. In turn, this leads to costly weight gains.

Interest in the possibilities of urea as a replacement for part of the protein required by cattle has increased lately. Research at the Oklahoma station has shown that urea can be substituted for as much as one-half of the protein of cottonseed meal in corn and sorghum silage rations for fattening steer calves.

Urea Proves Valuable

An average of five years' results shows that steers fed the urea-containing supplements made gains equal to those receiving the same amount of crude protein from cottonseed meal. These results with more than 100 steers indicate that urea may have an economical and important place in fattening rations.

Experiments at Missouri, Kansas, and Oklahoma during the past few years have shown that cattle wintered to make the maximum use of grass during the following grazing season, return a high rate of profit. A method of "deferred full-feeding" has been developed for calves or yearlings.

Under this system, stocker cattle are

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wintered so that they stay in good thrifty condition but a little on the thin side, and then allowed to graze for about 100 days until gains on pasture begin to drop off. They are then full-fed grain, on pasture or in dry-lot, until they reach a slaughter finish. Such a system has been highly profitable in the southern Great Plains area.

At the Dixon Springs Experiment Station, Illinois, different methods of producing fat steers and feeder cattle are under study. These should be of special interest to producers.

Study Moderate Grazing

Good cattlemen have always believed that moderate grazing is a good practice. The importance of proper stocking rates in order to return the most profit from range pastures, and yet protect the grass for future production, has been studied recently at South Dakota. Summer grazing trials were conducted over a nine-year period to show the effects of heavy stocking on the native grass pastures of that area. Cows on heavily stocked pastures were allowed 9 acres of grass per cow, while those on moderately grazed pastures had access to 15 acres per cow.

Calves from cows on heavily grazed pastures were lighter at weaning and the cow-and-calf gains per acre declined steadily throughout the first eight years of the experiment. Heavily grazed pastures often failed to carry the cows for the full pasture season. It was shown that the cows grazing the heavily stocked pastures were removing about 63 percent of the total foliage produced annually, as compared to only 46 percent for the moderately stocked pasture.

Under these conditions, heavy stocking caused a deterioration of the range and the heavily grazed pastures actually produced less total foliage than those moderately stocked. The authors state that conservative grazing of range pastures can lessen the effects of drought by providing some carry-over of forage, as well as by maintaining a higher state of grass production in dry years.

Montana Studied Calcium

Research at the Montana station has shown that when fattening cattle receive abnormally high intakes of calcium in rations where phosphorus is lacking, gains are reduced. Feed consumption and rate of gain were reduced when steers are fed rations low in phosphorus.

Symptoms of a phosphorus deficiency in this study were decreased gains in weight, poor appetities, rough hair coats, and stiffness of the legs. Often a depraved appetite is noted. Cattle which need phosphorus may chew on sticks, bones, or other foreign objects. If these are swallowed, the cattle may die of the resulting complications.

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Greetings from the New NVATA President . . .

Each day is the beginning of a new year to teachers of vocational agriculture. Opportunities surround us each day we teach. At times we may let the many little duties and routines of the day cloud our vision.

How can we encourage ourselves? How do we limit the time spent on a low limb and lengthen the part of the cycle spent on a high limb without getting our feet off the ground? It was because of such problems that the National Vocational Agricultural Teachers association was born. It began in Milwaukee, Wis., December, 1948. On June 30 of last year the membership had grown to almost 7,000. How can our NVATA best serve us? This as well as other questions I cannot answer alone but with all working together we can solve them.

A. C. Hale

In what direction are we going? How can we best be trained to recognize opportunities? These as well as many other questions will require the services of a master teacher. Through selection we can have the teacher of our heart. It can be accomplished in this way—by taking the best parts of all the best teachers we know and putting them together in one unit. This teacher will be you. This is a complicated assignment. How can it be accomplished? How can we develop professional attitudes and improve professionally?

Exchanging ideas should be foremost in our minds. With the use of such publications as Better Farming Methods and other national magazines, national conventions, state conventions, small groups, teacher training departments, individual visits, and exchange of teachers for conferences much good can be accomplished.

To what extent can we develop thinking abilities in our students that will equip them to recognize good changes when they appear. For example, during the period in which the vocational agriculture act has been in operation some breeds of hogs have gone through three or four distinct changes in conformation. The hog is due no credit for this. The change was born as an idea in the minds of men. Hybrid corn knocked the props from under some of the best lesson plans that were developed during the early years of vocational agriculture. More startling developments are in the making for corn. What is our plan for the releasing of old customs and practices and grasping for the new?

If we are willing to accept the responsibility of being our teacher and can influence our students to do the same for themselves, we should have a definite plan for increasing the warmth of our hearts for people while the years are passing by. Edwin Markham's little poem, "Two At A Fireside," pictures an idea for warming a heart.

"I built a chimney for a comrade old,
I did the service not for hope or hire—
And then I travelled on in winter's cold,
Yet all the day I glowed before the fire."

A genuine service to people will warm any heart.

As president of our NVATA I am wishing you all the joy and success that is possible to anyone.—*A. C. Hale, president, National Vocational Agricultural Teachers Association.*

Pictured above are two past presidents of the New England County Club Agents' Association. Mrs. Ruth Weston, Laconia, N. H., and "Hank" Krebser, Litchfield, Conn., point out the "best county in New England." Small tags were used to show the homes of agents.

New officers who will lead the Oregon County Extension Agents Association during 1952 are, from left: Garnet Best, Wallowa county, vice president; O. E. Mikesell, Linn county, president; and Don Rasmussen, Marion county, treasurer.

When writing advertisers please mention *Better Farming Methods*

The Spencer Chemical Company, Kansas City, Mo., has recently started publication of a booklet for their fertilizer dealers entitled "Today's Fertilizer Dealer." Editor of this publication is M. H. Straight, right, above, advertising manager of the company. With him are, right to left, Chuck Monson, Spencer representative for the state of Iowa and Ralph Gerlach, fertilizer dealer in Nevada, Ia. Editorial material in the publication will be devoted to stories and pictures of dealers, their ideas, and the work they are doing.

★

Holstein Cow Placing

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No. 4 is placed over No. 1 in general appearance because of her great size, ruggedness, and Holstein-Friesian breed character. No. 4 is superior to No. 1 in length of body and general scale, smoothness over rump and is sharper and better blended in the shoulder than No. 1. No. 4 possesses more udder capacity and better general balance of quarters than No. 1 and has a much higher, wider, and more desirable rear attachment of udder than No. 1. However, No. 1 is cleaner cut in the throat area and stands on more desirable, straighter hind legs than No. 4.

In placing No. 1 over No. 2, we find that No. 1 has more width at pin bone setting and hips, more depth of heart girth, superior chest width, and greater spring of rib and depth of rear flank. No. 1 has a smoother rump and more desirable tail setting than No. 2. We also rate strength of fore udder attachment and placement of teats as more desirable on No. 1 udder than that of No. 2.

In placing No. 1 over No. 2 we concede more sharp dairy angularity, a more capacious udder, superior Holstein-Friesian breed character, and a sharper, better blended shoulder on No. 2.

In placing No. 2 over No. 3, we find No. 2 possessed of much more desirable Holstein-Friesian breed character, greater length of body, more width of loin, and superior spacing of pin bones. No. 2 possesses much superior extreme dairy character, sharper and better blended shoulders, and much greater udder capacity with less quartering and better balance of rear quarters than No. 3. However, in making this placement we recognize superior strength of attachment of fore udder and more pleasing and smoother tail setting in No. 3 than is found in No. 2.—*Glen M. Householder, Holstein-Friesian Association.*

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Helpful Booklets Begin on Page 68

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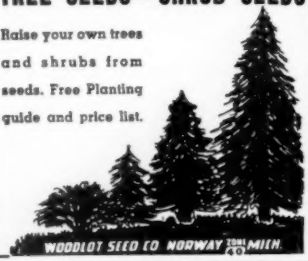

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BETTER FARMING METHODS, Service Department Mount Morris, Illinois

COUNTY AGENT RECEIVES HONOR—County Agent B. B. Jones, Orleans Parish, La., recently completed his 25th year as secretary of the agricultural committee of the New Orleans Chamber of Commerce. In appreciation of his very fine service he was presented with a handsome silver tray.

"We have benefited through the pioneering of this committee in such undertakings as bringing about tick eradication, originating exhibitions and contests, improving marketing conditions, and providing assistance in developing efficient dairy, poultry, and other livestock

R. C. Rault, left, president of the New Orleans Chamber of Commerce, is shown presenting a silver tray to B. B. Jones, Orleans Parish, La. Jones received the tray in appreciation of his 25 years of service as secretary of the agricultural committee on the New Orleans Chamber of Commerce.

projects. Particular vision was displayed by the committee in its 4-H Club and other activities involving young people who are to be agricultural producers of tomorrow," said the resolution praising Jones for the work achieved by his committee during the quarter century period.

Much of the success of these undertakings, the association agreed, "is due to Mr. Jones' unflagging work as evidenced by the fact that he has attended an average of nearly 200 agricultural meetings and traveled an average of 15,000 miles each year throughout the New Orleans trade area and other sections of the state."

One of Mr. Jones' traits is the ability to secure the wholehearted cooperation of businessmen in furthering his work as county agent. He probably is one of the most widely known and loved men in southern agriculture. For the last several years he has been secretary of the Asso-

ciation of Southern Agricultural Workers, at whose annual meetings from 1,000 to 1,600 are in regular attendance.

Mr. Jones has been very active in the Louisiana County Agents' Association. During the past years he has served in the capacity of secretary-treasurer and president of the Louisiana Association.

For several years he has been a delegate to the national convention. On the presentation, the inscription reads: "With affection and deep appreciation for 25 years of unselfish devotion to advancement of agriculture in the state of Louisiana."

COLORADO ELECTS OFFICERS AT ANNUAL MEETING—The Colorado County Agricultural Agents' Association held their annual meeting at Fort Collins on December 3. At this annual meeting the following officers were elected: Stanley H. Stolte, Arvada, Colo., president; H. B. Brooks, Arvada, Colo., vice president; Carl H. Powell, Delta, Colo., secretary; and Ralph Swink, Salida, Colo., treasurer.

Stolte has served as county agent in Colorado since 1933. He has been in Jefferson county in Arvada as county agent for the past nine years. He has served as treasurer and vice president of the Colorado Association and was a delegate to the national convention at Memphis in October, 1951. He served as transportation committee chairman at the national convention held in Denver, 1949, when the Colorado county agents sponsored a mountain tour up through Grand Lake, Colo., over Trail Ridge, and back to Denver.

Brooks has served as 4-H Club agent in Jefferson county since 1942. His work as 4-H Club agent has been very successful and he has helped to develop many state and national 4-H champions.

Pictured above are the new officers of the Colorado County Agents' Association. They are, left to right, Carl H. Powell, Delta, secretary; Stanley H. Stolte, Arvada, president; and H. B. Brooks, Arvada, vice president. Ralph Swink, Salida, treasurer, is not shown.

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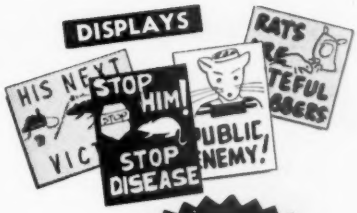

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Better Farming Methods Mount Morris, Ill.

For a comprehensive listing of agricultural films, refer to the November Directory issue of Better Farming Methods.

In 1951 he served as Association secretary.

Powell served as county agent of Adams county at Brighton from 1942 to 1949 and is now county agent for Delta county, Delta, Colo. Powell has been an advocate of pure seed production and has been successful in developing sound agricultural programs in the counties in which he has worked. In 1951, he served as treasurer of the Colorado County Agents' Association.

Swink has been county agent in Chaffee county, Salida, Colo., since 1942. In October, 1951, he attended the National County Agents' meeting at Memphis. Although he is the only agent in Chaffee county his extension program has been well-rounded including 4-H Club activities, home demonstration club projects and well-rounded agricultural programs.

MONTANA PUBLICITY DIRECTOR NAMED—Bille Janssen, president of the Montana County Agents' Association, notifies me that T. H. Alexander, county extension director at Billings, Mont., is the publicity director for the Montana County Agents' Association.

We are glad to receive this information and hope that state association presidents in other states appoint chairmen of this nature and send me their names. We are also expecting some news stories of Montana agents activities from Alexander as well as similar chairmen of other state associations.

WHITE WINS TOP GREEN PASTURE AWARD IN VERMONT—Vermont's top Green Pastures award for county agents has been won by Robert E. White, Grand Isle extension agent.

White has been picked by a committee of three as having done the best all-around job of planning and promoting the 1951 Green Pastures program in his county.

According to Robert P. Davison, county agent leader for the Vermont extension service, White made good use of the roughage program in teaching farmers of his county the value of better roughage in their dairy programs.

"Bob White's work with Green Pastures members in Grand Isle county was highlighted by excellent newspaper stories throughout the entire season, good use of radio, and many farm visits. His goal—to show the importance of a well-rounded roughage program for the entire year," said Davison.

White's award is a special Green Pastures plaque citing him for his outstanding contribution to the 1951 Green Pastures program. The plaque was presented to White by Louis Zehner, vice president of the Federal Reserve Bank of Boston, and chairman of the New England Green Pastures committee.

The Grand Isle county agent is the second extension agent to receive this

Vermont's Green Pastures award for county agents was won by Robert E. White, left, Grand Isle extension agent. The committee picked White for having done the best all-around job of planning and promoting the 1951 Green Pasture program in his county. Presenting the award is Louis Zehner, chairman of the New England Green Pastures committee.

recognition. Last year, Lucien Paquette, Addison county agent, was given the first such award made to a Vermonter.

White has been county agent in Grand Isle since 1948. He is a former 4-H Club member and a graduate of University of Vermont, and state agricultural college in 1940. While at the university, he was a member of the 1938 and 1939 football teams and majored in dairy.

★

Negro County Agent Honored

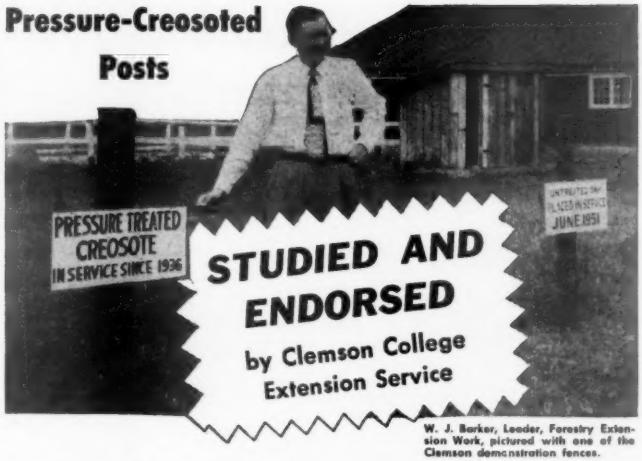
The father of Negro agricultural extension work, T. M. Campbell, field agent of the U. S. Department of Agriculture, was honored last week at Tuskegee Institute when a marker was placed at the site of his appointment as the first colored farm demonstration agent 45 years ago.

It was a significant recognition of the dramatic achievements of a man who has played an important role in the development of an educational program which has gone far in making for better rural living in the South.

Director of Extension M. L. Wilson

Director M. L. Wilson, left, USDA extension service, is shown congratulating Field Agent T. M. Campbell. The latter was honored recently when a marker was placed on the site of his appointment as the first Negro farm demonstration agent 45 years ago.

Pressure-Creosoted Posts



W. J. Barker, Leader, Forestry Extension Work, pictured with one of the Clemson demonstration fences.

● Clemson College Extension Service recommends pressure-creosoted posts as an excellent buy for farmers. As Mr. W. J. Barker of Clemson puts it: "Because fencing is such an important investment for farmers, we are glad to show them the long life of pressure-creosoted posts."

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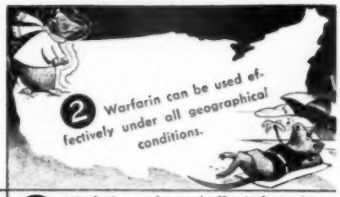
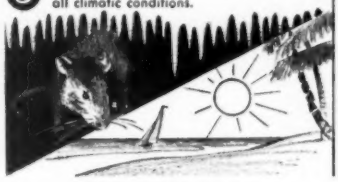


3. Warfarin can be used effectively under all climatic conditions.



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Don't miss it. Use it every month.

was the principal speaker for the occasion. "Negro extension work has come a long way since that historic day in 1906," he told a gathering of farmers and professional agricultural workers from all over the Southern region.

Standing under the cedar tree where the appointment was made, Director Wilson declared, "From one lone worker to a staff of 846 competent Negro agents and supervisors in the 17 Southern states is the important and meaningful story that had its beginning here."

Presentation of the marble marker was made by B. F. Hill, an Alabama county agent, who as a student at Tuskegee, was picking up sweet potatoes behind the plow of Campbell on that November day in 1906 when the latter received notification of his appointment as the first demonstration agent.

★

Cows Tolerate Toxaphene

Small amounts of toxaphene apparently are not harmful to dairy cattle.

This insecticide is used widely in the control of grasshoppers on forage crops and pastures and in the control of flies, lice, and ticks on dairy cows.

The effects of toxaphene on dairy cattle were investigated during 1950 by research workers of the Texas Agricultural Experiment Station. Amounts varying from two and one-half to thirty-seven and one-half grams of actual toxaphene per day were fed to four Jersey cows. None of the cows showed any harmful effects as long as the dose of toxaphene was not over five grams per cow daily.

However, when the dosage was increased to seven and one-half grams, symptoms of toxaphene poisoning—extreme nervousness, loss of appetite and convulsions — became evident, usually within one to two weeks. Feeding larger dosages of the poison finally resulted in the death of two cows.

In another phase of the experiment, calves were not harmed by drinking milk from Jersey cows fed half a gram of pure toxaphene a day. Leighton estimated that a dairy cow eating roughages sprayed with normal amounts of toxaphene for grasshopper control would not consume more than half a gram of toxaphene in 24 hours.

Barn Equipment Bulletin

Agricultural leaders can obtain a copy of a two-page leaflet entitled "Barn and Barnyard Equipment—Its Value and Care."

The bulletin is designed to provide helpful information to agricultural leaders. A copy may be obtained by writing to the Marketing Service Department, Armco Steel Corporation, Middletown, O.

Feeds Need Vitamin B-12

By Robert S. Kunkel

● THE NOW WELL-KNOWN vitamin B_{12} was one of the most illusive of the vitamins discovered to date. Scientists worked many long years before it was finally isolated in 1949. Today, vitamin B_{12} is considered just another vitamin and is added to all swine, poultry, and turkey formulations.

Still More to Learn

Although B_{12} is commonly used in feeds at this time there is a great deal still to be learned regarding its role in nutrition. Many reports indicate interrelationships between vitamin B_{12} and amino acids, antibiotics, and other vitamins. It will probably take many more years of research before we have the answers to all the questions presented by the discovery of B_{12}.

The end result of this type of research, however, canot be anything but favorable from the standpoint of swine, poultry, and turkey raisers. It will mean that less feed will be needed to raise a pound of meat. It will be possible to fortify feed with more nearly the exact requirements of the animal thereby obtaining optimal growth for feed consumed.

At the present time there is considerable controversy regarding the requirements of B_{12}, methionine, and antibiotics in feeds. There has been some work which indicates that the addition of methionine to a feed lowers the requirements for vitamin B_{12} and the reverse also holds true. Reports have also been issued stating that antibiotics in feeds lowers the requirement for vitamin B_{12}, but once again the reverse has been found to be true.

To further confuse the situation some experiments indicate optimal results when vitamin B_{12}, methionine, and an antibiotic are included in a feed at relatively high levels.

Wait For More Results

A conservative approach to this matter might be advisable at this time until further information is obtained showing whether the requirements for these materials is lower or higher than we are now using. Feeds that will give good results are necessary and lowering the amount of vitamin B_{12}, or other nutrients, in a feed before conclusive evidence warrants such a change may be penny wise and dollar foolish. Most university people still recommend that

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levels of approximately 10 milligrams of vitamin B_{12} still be included in practical feed for poultry and swine.

The use of vitamin B_{12} supplements in feeds has undoubtedly resulted in an over-all better quality feed. This is especially true in sections of the country where little fish or animal protein is used, since the ration was probably deficient in this vitamin. Vitamin B_{12} was also of considerable benefit in rations containing relatively large quantities of fish and meat since the B_{12} content of these ingredients has been known to fluctuate greatly.

Vitamin B_{12} supplements used in conjunction with natural products containing some B_{12} has been known to work well. In some instances vitamin B_{12} in an all-vegetable ration containing a good quality protein supported growth at a level comparable to that obtained when fish and meat products were used.

Vitamin Stretches Supplies

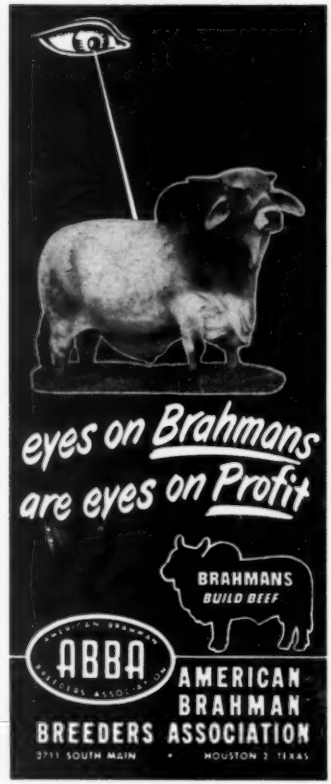
The advent of vitamin B_{12} in feeds has also aided in stretching once short supplies of fish and meal and meat scrap. Meat scrap and fish meal can still be advantageously used in formulations but the levels used are much lower than was once thought necessary for best results.

The rapidly increasing use of vitamin B_{12} in feeds has decreased the cost of this vitamin approximately 300 percent over the past two years. It has reached a low price today of about 6 cents per milligram in carload quantities. The cost of adding the necessary levels of B_{12} to a feed is almost insignificant as compared to the benefit obtained by adding it to the formulation.

Once again industry has served the farmer by discovering, testing, and producing vitamin B_{12} at a low cost so that feed manufacturers can produce quality feed which will produce more meat.

★

This new auger type batch feed mixer has a 300 pound capacity. It is suitable for poultrymen, turkey raisers, hog and stock feeders, and dairy farmers. Made by Farmworthy Manufacturing Company, Quincy, Ill.



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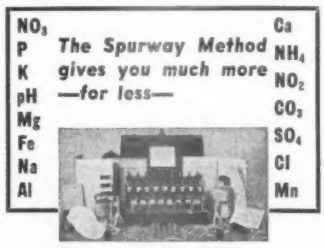

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New officers of the Louisiana County Agents' Association are, left to right, Ralph R. Brown, county agent, Beauregard parish, DeRidder, La., secretary-treasurer; Max McDonald, county agent, Madison parish, Tallulah, La., president; and W. R. Vallot, associate county agent, Evangeline parish, Ville Platte, La., vice president.

★

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Warning of the anticipated shortage is based upon expectations that fertilizer demands will be the greatest in history. Total production will probably be up at least 1 percent with nitrogen output increased 5 percent and potash output up 5 percent from 1951. However, superphosphate production may decline 10 percent, because of unprecedented priority demands for sulfur and sulfuric acid by defense industries. Hence farmers are warned that in some areas they may be unable to secure the exact types of fertilizer they want, and they may be unable to obtain their full requirements.

The wise farmer will order now and store his fertilizer. He can do this satisfactorily by following these precautions:

(1) Store fertilizer in a dry place where there is little variation in temperature.

(2) Pile fertilizer no higher than five or six bags.

(3) Never pile the fertilizer on the ground or even a concrete floor—the best way is an elevated wooden platform.

A Catalog-Calendar

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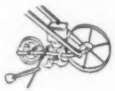

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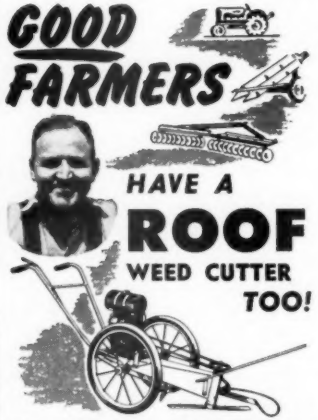

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4-H News

4-H Leader Honored

When 4-H Leader Bob Ewing, Brockton, Mass., went to a town 4-H committee meeting in Pembroke recently, he was completely surprised to find he had walked into a gathering of nearly 400 club members and friends who had met to honor him for the completion of 25 years' work as county club agent. Musical selections, a receiving line beneath the 4-H colors, and refreshments created a delightful atmosphere. Bob says, "When you are surrounded by a group of people whom you consider friends, then you know the Heart H will never be forgotten by 4-H club folks."

★

Psychology Applied to 4-H Club Work

Dr. Arnold Gessell, noted psychiatrist, and founder-director of the world famous Institute for Child Study at Yale university, spoke at the New England Club Agents' conference. Four-H leaders would find inspiration in his statements concerning club work.

Gessell cautioned that in expecting accomplishments from children the 4-H leader must take into consideration the age behavior of the particular individuals with whom they are working.

The following is a brief summary of the general age characteristics: The ten-year-old has quieted down from the self-motivated nine-year-old, become self-contained and is quite easy to work with. The eleven-year-old becomes a little rebellious and self-assertive with a desire to attain independence. The twelve-year-old is enthusiastic, interested, but inclined not to complete a project. He is not so obviously assertive, but worries about being understood by adults. The thirteen-year-old draws more inside himself and is often called moody. He is inclined to be critical of parents and terribly conscious of what others think. The fourteen-year-old is not as moody, mixes with crowds more and appears more like the twelve-year-old. The fifteen-year-old is more self-motivated, interested in groups and needs counselling. The sixteen-year-old becomes more poised and self-contained, remarkably similar to the nearly perfect five-year and ten-year stage. Dr. Gessell noted that it takes 25 years to "grow up" in the modern culture.

Leaders should not be discouraged at the loss of club members, says Gessell, but rather feel that something has been accomplished by some contact with the child.

Concerning long time projects, Gessell felt that they should be given subtitles and variations in order to maintain the

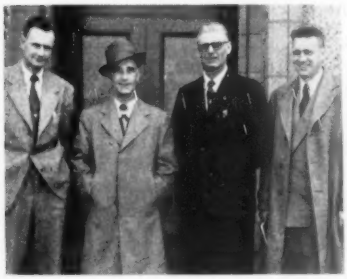
When writing advertisers please mention *Better Farming Methods*

interest of the youngsters. Thereby the project may work as a chain reaction or one road with many branches.

Gessell believed that 4-H could do more with exhibiting imperfect things on their way to becoming something rather than always showing the perfect results.

The conclusion of his talk stated that 4-H Club work could be the tool for teaching youth the respect for dignity of work, concern for ethical and moral living, and a recognition of the inherent dignity of human nature.—*George Erickson and Helen Sellew, Middlesex county club agents.*

★



These are the men who will head the Montana County Agent Association in 1952. From left to right, W. W. Mauritsen, first vice president, Flathead county; B. G. Janssen, president, Sheridan county; J. H. Mikkelson, second vice president, Beaverhead county; and Allen Nelson, secretary-treasurer, Judith Basin county.

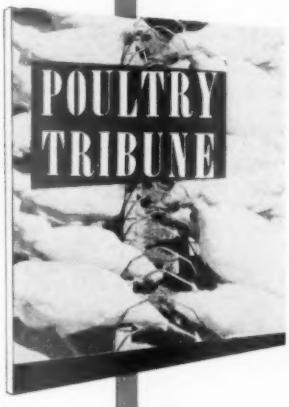
★

Vo-Ag Loses Negro Leader

Vocational agriculture education in Georgia and the South lost one of its staunch exponents in the passing of Alva Tabor, supervisor of agricultural education for Negro schools.

His over 30 years with agricultural work began in 1918 with the Georgia extension service as first Negro county agent in Washington county, Georgia. After three years, he was employed as the first state agent for Georgia Negro 4-H Club boys' work by the Georgia extension service. It was then that he was loaned to the State Board of Vocational Education for a period of three months to initiate the program of vocational agriculture for Negro schools. So impressive was he in the role of initiator that he was retained as supervisor of agricultural education for Negro schools and also head itinerant teacher trainer until his passing, December 2, 1951.

For his attainments in the field of agriculture, he was awarded the Honorary Superior Farmers degree, became honorary member of the New Farmers of America. During all of these years of his service, Mr. Tabor was able to maintain a fine spirit of cooperation and working relationship among the local, state, and federal officials.



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By T. J. Wakeman
Teacher-Trainer in Farm Mechanics
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Since this vital part of the program has been completed there seems to be a noticeable lack of larger jobs being done that are needed in the supervised program and for the home farm. These much needed projects would give our students an excellent opportunity to employ to a greater degree than ever before the skills learned.

Lack Knowledge of Needs

One of the main reasons why shop programs are not developed very far into the "doing stage" is the lack of knowledge of home farm needs on the part of the teacher. This condition has been encouraged by heavier teaching loads and a lack of positive action that we lost during the last war when we were unable to travel for field trips. Then, when transportation became available we felt we could get along without field trips. As a result, our entire program has suffered because our teaching has become too academic in many cases.

Plan A Field Trip

If you feel your shop program is not as effective as it should be, consider a well planned field trip for the group to one of the student's farms.

1. Select a student's home farm near the school to prevent too much time being used in travel.

2. Arrange for transportation with your principal or school superintendent for two occasions (the extra in case of inclement weather).

3. Supply an appropriate form for the field trip.

4. Make arrangements for all members of the family to be present on the visit you make alone and also when you bring your students.

5. During the visit which you make alone previous to the class visit, list all of the needed jobs you can find.

6. Make every effort to keep the group small—not over 16.

7. Have an understanding with the group regarding their conduct. It is wise to have the group give assistance in setting up a standard for their conduct such as: (a) Refrain from picking fruit, take fruit only when offered by farmer; (b) when crossing fences, cross at the posts if a gate is not accessible; (c) do not smoke, even if the farmer smokes; (d) do not tread plants, walk between the rows; (e) refrain from horse play and loud noise, use only conservative, appropriate remarks; (f) ask the farmer's point of view concerning any questions which may arise.

8. Supply the group with the field trip form to fill out on his field trips. This form should be made up with the student's help at which time it is advisable to explain each point to them. The form should include: (a) Problems of the farmer and his wife relative to farm mechanics which cause them constant trouble or are of the nature that cause mental agitation; (b) farm power and machinery problems; (c) rural electrification problems; (d) soil and water management farm mechanics problems; (e) processing of farm products problems; (f) farm buildings, layout and other structural problems; (g) farm shop problems.

Field Trip Conduct

Conduct as planned above. The following may be suggestive problems since these were found on a well planned field trip.

1. Ask the farmer and his wife for problems about the farm relative to farm mechanics that cause them constant trouble. They may be small jobs—yet of such a nature that the day is started off wrong.

2. Obtain information from the wife about husband's difficulties relative to farm mechanics, such as: (a) He burned his hand when he lifted the lid from the cook stove due to the handle being broken; (b) there were flies on the breakfast table due to wire being torn in the screen door; (c) the faucet that dripped in the bath tub caused awakening during sleep; (d) the bull got out of the bull lot (gate ready to fall down—hinge hook pulled out of post); (e) he has to pull tractor with truck to start it on damp morning; (f) the hay fork rope caught in pulley frame because rope was tied instead of splicing.

3. Obtain information from the husband about wife's difficulties relative to farm mechanics: (a) The number of eggs from the 60 hens has fallen from 42 to 18 due to litter in the hen house being wet (caused by a leaky roof); (b) the chickens broke eggs (need more nests); (c) the bath tub was discolored due to water dripping; (d) the hot water tank was leaking behind the kitchen stove; (e) there was a constant fear of the child falling through the rotten cistern top (mother hounding child about staying away from cistern); (f) the fire would fly from the ironing cord when ironing.

4. Farm power and machinery problems: (a) The combine failed to clean grain when much chickory entered the machine; (b) it took two days each spring to get grain drill in working condition, plus an unreasonable amount of repair needed; (c) the corn stand was poor due to the discs not operating properly on corn planter; (d) the mower would not cut heavy crops of lespedeza due to ledger plates being worn out in guards; (e) the side rake left unraked hay because of missing teeth and teeth too far from ground; (f) in turning wet windrowed hay, the hay would roll up in knots.

5. Rural electrification problems: (a) The lights became dim when motors were running; (b) the milker motor burned out about every three months; (c) there were insufficient outlets in the dwelling house; (d) the food thawed in the home freezer—the freezer was on the well pump circuit; (e) each time a new motor of any size was added a new fuse panel was installed; (f) there were no lights in the silo or chicken house.

6. Soil and water management farm mechanics problems: (a) the terraces were not maintained; (b) a ridge of from 8 to 18 inches in height bordered each strip in the fields when contour strip farming was practiced; (c) the alfalfa crop froze out in low places in one field; (d) in fields where contour strip farming

was not used the row crops were planted up and down the slopes causing washing; (e) there was water for livestock in only three out of seven fields; (f) the road from the farmstead to the county road was practically unusable during rainy weather due to the lack of drainage and a crest in the road.

7. Farm buildings, layout and other structural problems: (a) The farmer had to stop his vehicle twice to open a gate on each trip from the farm; (b) there were insufficient fences to separate cattle properly in the pastures; (c) the water had washed the flood gates out each time a big rain came; (d) loading or unloading cattle and hogs usually provided a miniature circus. A loading chute was needed; (e) there was no place to do shop work in cold or inclement weather; (f) all of the buildings except the milk house needed painting.

8. Farm shop problems: (a) The tractor was laboring underbelt load of a small silage cutter due to dull blades; (b) the hand saw would not cut green lumber; (c) the gates were short lived due to using knotty pine lumber; (d) the water pipes were leaking in the milk house; (e) the milking barn was cold due partly to broken window panes; (f) the poultry waterer leaked causing litter to stay wet; (g) the chickens scratched straw into the water fountain.

Give Assignments

Give each student an assignment to bring into class the next day. The assignment should consist of a list of farm mechanics problems from his home farm.

During the next class period a four-year training program in farm mechanics should be set up with all the group participating. When that is completed each student should set up one of his own using the problems found at home.

Sometimes one problem such as the straw being wet in the hen house may call for several jobs—one in woodwork, making a waterer stand; one in metal work, patching the roof; one in soldering, patching a leaky fountain, another in woodworking in making a vent for air circulation. With such a list of problems and jobs found on the home farm a four-year farm mechanics program could be formulated. The simple jobs should be used the first two years while the student is getting his basic training in shop. On each visit to the farm with the student the list may be improved upon.

It is wise to list the outstanding good features of the farm and farm facilities. The students will get ideas that may help them. The desirable features should be discussed thoroughly in order that each student have a clear understanding of each good feature.

Conduct well planned field trips—then use the information you find. The result will be more effective, easier, more practical and more enjoyable teaching.

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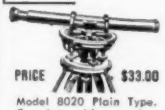
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This film stresses the importance of mineral elements in the soil and the need of conserving these elements as well as the soil itself. It shows the part agricultural colleges, county agents, and farm youth organizations are playing in the program of conserving or improving the productivity of the soil. Illustrated is how modern farm equipment is helping the farmer carry out this program that is now recognized as vitally important to farming and the general welfare of mankind.

This film, now available through Minneapolis-Moline dealers, will be made available for general use this fall. Ag leaders requesting this film should make reservations for next fall or later.

IGNITION AND SPARK PLUGS, 16 mm., sound, black and white, 19 minutes. Produced by Champion Spark Plug Company and available from Ideal Pictures Corporation, 65 East South Water Street, Chicago 1, Ill.

Here is the interesting graphic story of an ignition system and the importance of spark plugs in the operation of a gasoline engine. You will also see the servicing and testing of spark plugs for efficient and economical motoring. These are all demonstrated in this informative film.

The film is not available to groups below Junior High School level. It should work in well with a farm shop program.

DEEPER ACRES, 16 mm., sound, black and white, 22 minutes. Produced by the National Fertilizer Association, 616 Investment Building, Washington 5, D. C.

This is a story of a retired farmer. He witnesses the vast improvements which have taken place in agriculture.

His son, on returning from college, urges the development of deeper acres rather than the purchase of more land. Through good management practices, including the use of fertilizer, his son demonstrates the soundness of his ideas.

Finally, his grandson comes along with thoughts of improvement, such as the detection and correction of deficiency which are new to his dad. As the picture demonstrates, each new generation takes the responsibility for a newer and sounder agriculture.

MINERAL DEFICIENCIES, 16 mm., sound, color, 22 minutes. Available from the Wool Bureau Inc., 16 West 46th Street, New York 19, N. Y.

This film shows laboratory experiments and controlled experimentation of force feeding and soil treatment with proper minerals to improve quality of wool. It would be of interest to 4-H, FFA, and adult farmers.

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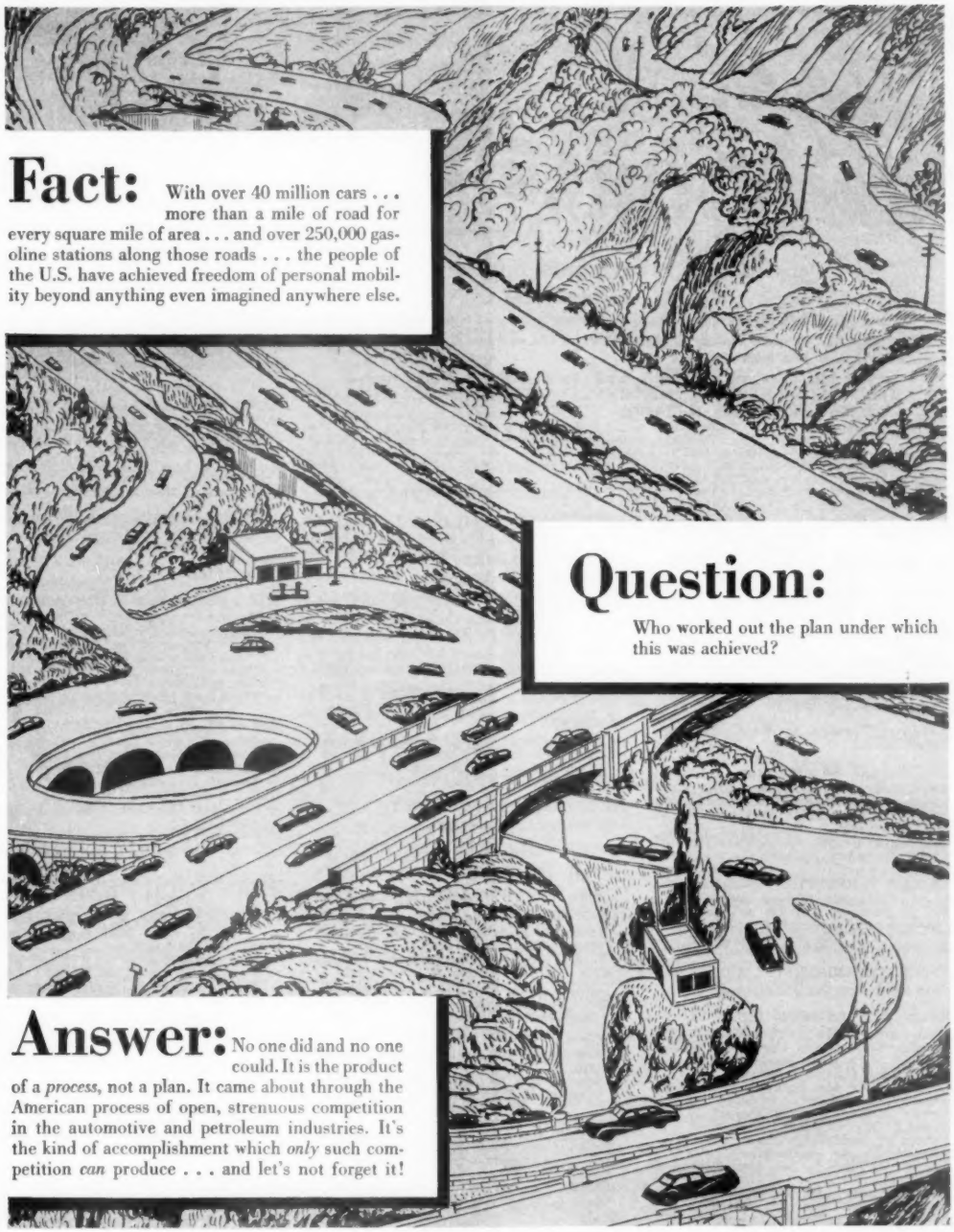

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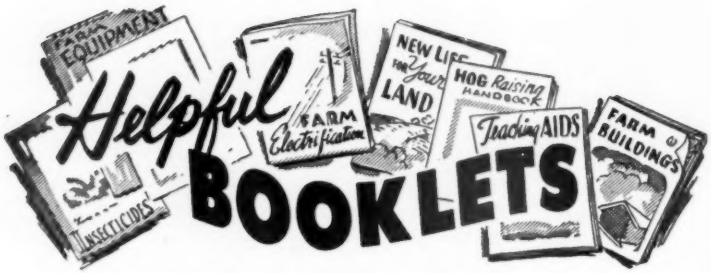

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Saw Catalog

Here is a new 12-page catalog describing a complete line of radial arm saws for home, commercial, and industrial use.

Specifications of various models are given along with the accessories, such as moulding cutter head sets, drill press attachment, and mortising equipment. All of these are clearly illustrated in the catalog.

Ag leaders may obtain a copy of this catalog by writing to Delta Power Tool Division, Rockwell Manufacturing Company, 600 East Vienna Avenue, Milwaukee, Wis.

For What It's Worth

By HERBERT L. SCHALLER, Editor

Eagles vs. Oysters

When God made the oyster, He guaranteed him absolute economic and social security. He built the oyster a house, a shell, to protect him from his enemies. When hungry, the oyster simply opens up his shell and the food rushes in.

But when God made the eagle, He said, "The blue sky is the limit. Go build your own house." And the eagle went out and built his house on the highest mountain crag, where storms threaten him every day. For food he flies through miles of rain and snow and wind.

The eagle, and not the oyster, is the emblem of America.

I read this story recently and it set me thinking.

Agriculture has not made the progress that we see today through leadership exemplified by the oyster. Most of our leaders in the past have been "eagles". They were willing to spend hours over a microscope in a laboratory doing minute research work. They were willing to tramp around a 40-acre field answering specific questions of a farmer. They were willing to work on a 24-hour basis to answer all calls for help.

They pioneered new fields. They brought new achievements to constantly improve agricultural production. They braved all manner of obstacles, and conquered them only through the tenacity and freedom that an eagle enjoys.

The theme for 1952 is all out production. Food is needed for people. Food is needed for livestock. Other agricultural products are needed to produce clothing, building materials, and a varied number of other items.

Do we have what we need to achieve increased production? Yes, I think so. At least agricultural leaders possess the necessary know-how of good agricultural husbandry.

Will we get what we need? I think so, barring adverse climatic elements over which we have no control.

How will we achieve it? The answer, perhaps, is to raise it through the best means and methods that we know how. It will mean the use of the best methods of husbandry to manage our natural resources and to use the best farm practices to give us maximum production.

Looking at it from another angle, however, we may need something else, too. Agricultural leaders, in the position of helping farmers, will need to be eagles rather than oysters.

Some people in agriculture today have lost touch with the farmer and basic farming. It has been a long time since they rubbed shoulders with him.

Many of these same people think that production goals will be met and food will be raised in direct proportion to the number of penciled plans, programs, and directives that can be written behind a desk. They rely on the fact that government knows the answer. They seem to discount the valuable understanding and information gathered by local agricultural leaders through day by day contacts with farmers.

"No, no, that soil isn't from my field. If it's to be tested, I want to make a showing so I took some soil from Bill Broce's place!"

Allotments, quotas, percentages, figures, and all the plans in the world are not the entire answer to production. Increased production calls for dynamic leadership—your type of leadership—and the use of methods that have thus far aided agriculture in the tremendous progress achieved.

Planning is essential. Good planning. But not the type that limits the freedom of the farmer to produce that which will be most profitable to him and to agriculture. Good planning must allow him to make the maximum use of his land through the knowledge of what it will produce. No so-called agricultural leader can shackle his freedom and dictate to him what to do if maximum production is to be achieved.

The proved and tried method of providing adequate leadership to local farmers is still the answer in achieving our production goals. Nothing yet has been established by law or executive decree that has anywhere near compared with the county agent, land-grant college, and USDA extension service.

Why? Because you, the local county agent, through this extension service, have been working in the interest of the individual farmer's welfare. You have not been interested in his political opinion. Your sole interest has been the progress of agriculture as it affected him and the field as a whole.

America counts on you to help achieve our production goals.

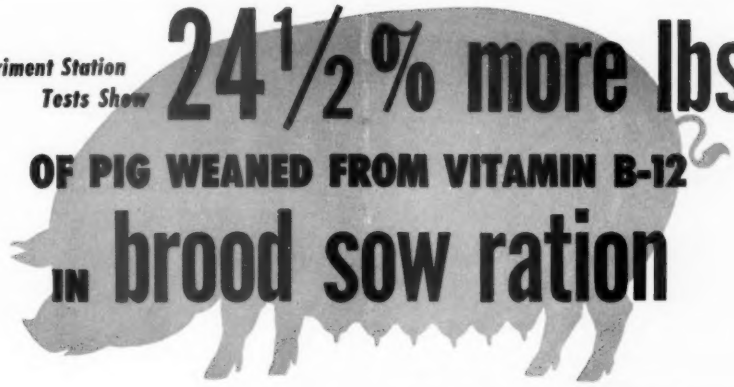
HLSchaller

Experiment Station Tests Show

24½% more lbs.

OF PIG WEANED FROM VITAMIN B-12

IN brood sow ration



This 3-year test dramatizes again the importance of Vitamin B-12 in brood sow rations—Vitamin B-12 supplement alone was the difference.

An increase in weaned pigs from 196.7 pounds per litter to 244.8 pounds indicates the importance of B-12 in brood sow rations. Other tests have given outstanding results on poultry breeder feeds. Tests like these emphasize the importance of B-12 supplements in obtaining top results with fortified feeds.

Of course, there is a difference in Vitamin B-12 supplements, too, and the B-12 you get from U. S. Industrial Chemicals carries these four specific advantages which make it preferred by many feeders.

1 – Primary bacterial fermentation, using special *anaerobic* organisms,

2 – Approximately 50% protein

3 – Substantial quantities of B-complex vitamins are present

4 – Contains unidentified growth factors, in addition to Vitamin B-12 which have been found to give an added growth response.

For your feeders to obtain these extra values at no extra cost, recommend feed formulations which use U.S.I. vitamin B-12 supplements.

THE VALUE OF VITAMIN B-12 WHEN ADDED TO A CORN-SOYBEAN MEAL RATION FOR BROOD SOWS IN DRY LOT

	Corn-soybean meal	
	Basal Ration*	Basal Ration* plus Vitamin B-12
Number of trials	3	3
Number of sows	21	18
Avg. number of pigs farrowed	8.9	8.9
Avg. number of pigs weaned	7.0	8.0
Avg. birth weight per pig	2.7	2.7
Avg. weight per pig at 56 days	28.1	30.6
Total litter weight at 56 days	196.7	244.8
Percentage of pigs farrowed still alive at 56 days	78.7	89.9

*Corn 70, soybean meal 25, alfalfa meal 2.5, cod liver oil 0.5, complex mineral mixture 2.0 and B-vitamins (Riboflavin 3.7 mg., ca-pantothenate 12.5 mg. and nicotinic acid 18.5 mg. per pound of ration).
Vitamin B-12 supplied to furnish 10 micrograms per pound of ration.

"Experiments have been conducted during the past 3 years to test the value of vitamin B-12 when added to a corn-soybean meal ration for brood sows in dry lot. The results of these experiments, which are summarized in table (above), indicate that B-12 has been of considerable value for brood sows.

Sows which receive vitamin B-12 in their rations farrowed the same number of pigs as those on the control ration, but they weaned an average of 1 more pig per litter and the pigs averaged 2.5 pounds heavier at 56 days of age. On the basis of total litter weight at 56 days of age, sows fed B-12 have weaned an average of 48.1 pounds more pigs than sows not receiving this vitamin.

The sows in this group have also weaned approximately 90 per cent of the pigs they farrowed, considerably above average . . . In each of the three years the experiments were conducted, the sows which received vitamin B-12 weaned more and heavier pigs than those on the control ration."

Missouri Agricultural Experiment Station, Progress Report 16

U.S.I.

Write or call for information on the following products:

1—U.S.I. Vitamin B-12 Supplement (6 milligrams per pound)
2—U.S.I. Antibiotic Feed Supplement (5 grams bacitracin per pound)
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INDUSTRIAL CHEMICALS CO.

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Dept. BFM, 60 East 42nd Street, New York 17, N. Y.

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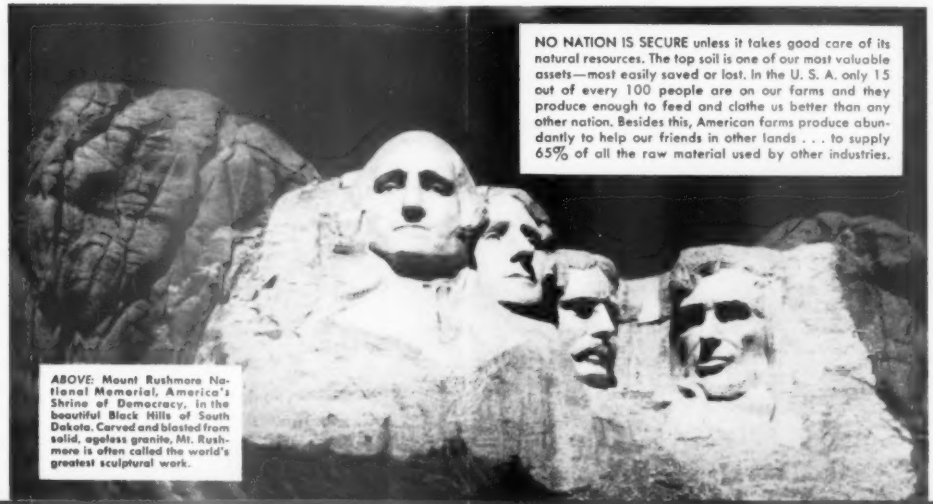
These four Farmer-Statesmen found the "Roots of Freedom" in the soil!



NO NATION IS SECURE unless it takes good care of its natural resources. The top soil is one of our most valuable assets—most easily saved or lost. In the U. S. A. only 15 out of every 100 people are on our farms and they produce enough to feed and clothe us better than any other nation. Besides this, American farms produce abundantly to help our friends in other lands . . . to supply 65% of all the raw material used by other industries.

ABOVE: Mount Rushmore National Memorial, America's Shrine of Democracy. In the beautiful Black Hills of South Dakota. Carved and blasted from solid, ageless granite, Mt. Rushmore is often called the world's greatest sculptural work.

"I know of no pursuit in which more real and important service can be rendered to any country than by improving its agriculture . . ."
—GEORGE WASHINGTON

"The Farmer: The Cornerstone of Civilization."
—THEODORE ROOSEVELT

"Let the farmer forevermore be honored in his calling—for they who labor in the earth are the chosen people of God."
THOMAS JEFFERSON—

". . . no other human occupation opens so wide a field for the profitable and agreeable combination of labor with cultivated thought, as agriculture."
—ABRAHAM LINCOLN

You can help preserve that freedom through sound soil conservation

Your freedom . . . America's freedom . . . is rooted in the topsoil!

Washington knew this when he spoke out for soil conservation. Jefferson, Roosevelt and Lincoln knew it when they spoke for agriculture. Because they were farmers themselves, all four knew that hunger and poverty breed war and strife . . . that food and the products of the farm are powerful weapons for peace and freedom. They knew, too, that America's agriculture and the enterprising American farmer were, and are, keys to American greatness . . . that the industry of the soil was, after all, the basic industry of any nation.

Today, those things . . . the peace and freedom that hinge on farm production . . . are in the hands of you, the American farmer. *That* is why *soil conservation* is important both to you and to America.

Year after year more of America's future washes away—needlessly. Is anything being done about it? Yes, thousands of modern farmers like yourself are seeing the need for sound conservation practices and *are* attacking the problem. Typical are the farmers who have organized and manage 2500 non-political Soil Conservation Districts. Sure, it has cost them some money as an original investment. But ask a soil conservation man and he'll tell you that his land pays him many times over what he puts into it. Increased production pays back the principal plus increased yields. Then too, the generations of the future who will continue to live by the land, will benefit as even you do.

If you are interested in the program of Soil Conservation Districts, see your MM dealer today or write to the United States Department of Agriculture, Washington, D. C. Ask for complete information on establishing a soil conservation district in your neighborhood. You too, will find that the "Roots of Freedom" are in the topsoil . . . and they will be stronger because of you.

HELPFUL FACTS ABOUT SOIL CONSERVATION DISTRICTS

- Soil Conservation Districts are made possible by your own state laws.
- Operate independently of any federal law or regulation.
- Do not handle any such federal programs as marketing agreements, market quotas, acreage allotment or crop insurance.
- Get the conservation job done by local people through local effort in the American way.
- There is no charge for the technical and other district help that is available to apply a conservation plan to your farm.

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